MA LIGHTING

grandMAnual

Full-Size . Light . Ultra-Light . Micro . Replay-Unit . onPC . Offline

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english

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NOTE:

All text marked with *, does not apply to the grandMA MICRO.
All buttons marked with **, are located in the grandma MICRO's COMMAND WINDOW only.

1 Introduction

1.1 General Information

Combining an approved concept of operation, an outstanding product design and first-class quality with a host of new ideas and the latest technology, this new console offer ulitmate control on larger shows. The grangMA range combines the best in mechanical design with a flexible and powerful software platform.

MA users will feel very familiar with ***grandMA*** from the very beginning. The basic operation modes, well known from the Scancommander have been well proven in the field as powerful tools for the control of intelligent fixtures and many are now the standard of the industry. Of course, there have been quite a few improvements as controlling hundreds of channels requires intelligent solutions to time consuming operations, but essentially, the ***grandMA*** is still an MA console – easy to operate, yet very powerful.

1.1.1Displays

The first remarkable feature of the ***grandMA*** are the contrast-rich, full color TFT touch screens integrated into a panel with adjustable viewing angle. Optionally supported are two external monitors. They allow for clear and precise control along with multiple visual represenations of group and preset operations, interactive output displays and different ways of cue listing.
Colors and gobos can directly be selected by labeled preset keys and allow for a fast and accurate control, while the encoders can be used anytime for fine tuning. By way of presets, stored positions can quickly be adjusted to changed arrangements.

1.1.2 Motorfaders

How can a console like the ***grandMA*** with just 20 faders (10 on the ***grandMA light and Micro***) possibly claim to control 4000 and more channels? It's not a trick, it's motorised faders. They automatically capture the actual values as soon as you switch over from one program library to another. Further special features are explained in the respective chapters following.

1.1.3 Programming features and data input

At first, the flexibility of the ***grandMA*** may surprise, but you have always the choice to do it "the old fashion way". Dealing with huge amounts of data will make you want to use improved ways of programming and even an automatic effect synthesizer.

1.1.4 Flexible Setup configuration

Because of the ***grandMA***'s flexibility, you will never lose direct access and control. View Macro keys allow to visualise current information at anytime. User profiles allow for differing window configurations to be recalled from previous shows to talyor the console for the particular type of show, Live Event, theater, Synchronised playback, nightclub, industrial, etc.

1.1.5 Hardware and Interfaces

The built-in Hard Disk Drive offers virtually unlimited storage capacity. The built-in flashdisk (not on the ultra-light, on which the software is on the HDD) contains the board's software and makes the ***grandMA*** independent from any external PC.

1.2 General Comments

This manual describes the possibilities th***at*** the ***gra***nd***MA*** has in store for you. Step by step, you will be guided through the logical aspects of working with this console.
You will soon find out, that operating the ***grandMA*** is simple and straight forward in view of the vast variety of features and options available. Once you are familiar with the basics, you will realise that you can easily try out new fuctions, as all procedures and operational modes are clearly structured.

Consequently, this manual starts with a general introduction, followed by basic settings within the Setup menu, such as selecting fixtures and dimmer channels with DMX address, modifications, etc.

Chapter 3 is dedicated to the practical aspects of setting up a Show, while Chapter 4 will show you how to create and edit Cues and Sequences. Moving on to Chapter 5, you will learn how to execute Cues, Sequences and Chasers. In Chapter 6, you will learn how to create, store and execute effects, chapter 7 with creating bitmap effects, Chapter 8 is dedicated to the Remote Control (abbreviated as "Remote") and Timecode, while Chapter 9 explains the function of Macros and the Quikey. Chapter 10 deals with the Command Line. Saving and loading your show is described in chapter 11. Chapter 12 explains the updating of the operational software as well as the fixture library, while chapter 14 is dedicated to the operation of the ***grandMA*** replay unit. Chapter 15 deals with True Tracking Backup and Playback Functions, the options in a network environment, in chapter 16 Full-Tracking Backup, in chapter 17 how to use the Remote Control with PocketPCs, in chapter 18 you'll find notes on the 3D Visualizer. Different usage of the MICRO is marked by * or **, and you can have a reference manual for the MICRO, too.

We are sure that you will enjoy working with the ***grandMA*** and we wish your show every success!

1.3 Specifications

1.3.1 Capacities

- 2048 control parameters (HTP or LTP) with 8 or 16 bit resolution, (optional) also available with 4096 channels (ultra-Light:1024) With NSPs expandable to 16 384 parameters.(on the Micro, only 1024 channels are possible)
- Virtually unlimited number of presets, memories, cue lists and effects

1.3.2 Ergonomics

- full colour TFT touch screens with a wide angle of view and 2 external (one on the ultra-light) monitors (optional)
- encoders for display setting, 5 master encoders for data entry
- 20 (10) motor faders and extra silent GO+ and GO– Buttons (10 non-motorized Faders on the ultra-light and Micro)
- Numeric keypad plus standard keyboard and mouse (only with ***grandMA***)
- Trackball

1.3.3 General user functions

- Constant access to single units or groups
- Fixture library with updates supplied via the Internet
- Selective programming for free combination of memories and effects
- Free switching between stage-orientated movements and DMX control in combination with 3-D.

1.3.4 Hardware

- Hard Disk Drive* , resp. CF, and 3,5“ Floppy Drive
- 12 MB flash memory for self-contained operating system (not on the ultra-light and Micro)
- Protection against radio interference (CE-Norm)
- Inputs: MIDI, Sound, Remote Go, SMPTE, Analogue (+10 V), DMX 512
- Output: 4 Times DMX 512 (2 on the ultra-light and Micro), MIDI, Printer, Ethernet
- Full tracking backup and sync mode with second unit

1.3.5 Dimensions and Weight

***grandMA*:**

- Width 48“, height 6“, depth 26“ (1200 x 150 x 670 mm)
- Weight 104 lb. (47 kg) without flightcase

***grandMA light*:**

- Width 29“, height 5“, depth 20“ (730 x 120 x 510 mm)
- Weight 46 lb. (21 kg) without flightcase

***grandMA* ultra-light:**

- Width 29“, Height 5“, Depth 20“ (635 x 157 x 490mm)
- Weight 28 lb. (12.8 kg) without flightcase

grandMA* replay unit** ▲✻✻✻✻ **14** Layout and Controls ***grandMA replay unit

***grandMA MICRO*:**

- Width 482mm, height 146mm, depth 438mm
- Weight 9.0 kg without flightcase

1.4 Installation

90–230 Volt, 40–60 Hz via Euro plug. No switching of voltage necessary.

DMX output: Complies with USITT DMX 512 (1990) protocol. The output is opto-insulated and exceeding RS 485 or RS 422. The pins in the 5 pin XLR plug are: Pin 1: ground, Pin 2: Data–, Pin 3: Data+ (pins 4 and 5: not used)

1.5 Safety Requirements (Important, read carefully!)

1.5.1Touchscreen

Never use any sharp items when operating the touchscreens! Deep scratches will damage the screen. During operation, due to temperature fluctuations, the calibration of the touchscreens may change, so an adjustment may be necessary. ▲✻✻✻✻ **2.12** Settings in the Setup Menu (point 1)

1.5.2 Sockets for keyboard and mouse

These sockets are located on the rear of the unit and are very delicate; especially during transport, take care that these parts are not exposed to mechanic stress.

1.5.3 Transportation/Case

During transport, take care that the touchscreens are not exposed to mechanical stress. Flightcases not provided by MA Lighting have to be designed in a way that **under no circumstances** pressure can be exerted on the TFT displays.

1.5.4 Panel (*grandMA* only)

If the mechanical parts of the display panel have not been moved for a period of time (more than 24 hours typically), you may feel a stronger resistance when adjusting the angle. This is normal and related to the mechanics of the pannel.

1.5.5 Battery (not on the ultra-light and Micro)

In case of power failure, the console offers (with fully charged battery) an emergency backup of at least 12 minutes. In case of a power failure, the console will automatically switch off after approximately another 3 minutes or another 12 minutes when CONTINUE is pressed. If **this occurs**, the console will **automatically save all data**.

When switching off the unit via **built-in power switch**, all current show data is saved automatically.

In case of an automatic shut-down after a power failure (described above), the unit must be running for **at least** 10 minutes, in order to guarantee a proper SAVE procedure the next time the unit is switched off. **By ignoring this advice the harddisk may be be damaged.**

The battery needs approximately 4–8 hours for a full recharge. Only then the battery is able again to bridge another power failure of up to 12 minutes.

According to manufacturer provisions, the battery has to be changed **after 5 years at latest**. Please attach a label on the unit, indicating the date of purchase, preferably update data etc. (choose a location, where this information can easily be seen). (This manual was printed in the year 2004.)

1.5.6 Harddisk*

During operation, do not push or knock the unit.

The built-in notebook harddisk is secured by a rubber-upholstery, however, mechanical stress can still damage the unit and lead to e.g. a complete loss of data.

Please read the appropriate notes and warnings given under „Autosave“ and „Oops Settings“, if the unit is to be used in very loud environment! Not necessary for the MICRO, as a Compact Flash is used.

1.5.7 Housing

- Do not block or cover the ventilation. If there is a high ambient temperature, the display pannel (***grandMA*** only) should be at least 5 cm open to ensure sufficient ventilation.
- Do not place any drinks on the unit.
- Do not use excessive force when adjusting the viewing angle of the display panel (***grandMA*** only).

1.6 General Safety Instructions

1. Read all the instructions in the user's manual, especially the safety requirements ▲✻✻✻✻ 1.5 Safety requirements
2. Follow all instructions. Keep the user's manual for later use.
3. Follow all cautions and warnings indicated on the unit.
4. Disconnect the mains plug before cleaning the unit; don't use any liquid or spray cleanser. Clean with a dry cloth.
5. Do not use the unit near water. Do not expose it to a humid environment. Do not spill any liquid over the unit.
6. Unplug this apparatus during lightning storms or when unused for long periods of time.
7. Do not block or cover any ventilation slots in the housing - they guarantee the reliable functioning of the unit and protect it against overheating. Do not install the unit into a frame unless sufficient ventilation is guaranteed. Install in accordance with the manufacturer's instructions.
8. Do not insert any objects through the slots of the unit, as these could get in contact with live parts or could cause short circuits. This may cause a fire and an electric shock.
9. Do not place the unit on unstable surfaces. It may fall and get damaged.
10. The unit is provided with a safety plug. This plug can only be used with safety sockets. These precautions should by all means be followed. If the plug should not fit into a given socket (e.g. the case with old sockets), the socket should be replaced by an electrician.
11. Do not ignore the safety purpose of the grounding-type plug. A grounding type plug has two blades and a third grounding prong. The third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
12. Do not place any objects on the power cord. Protect it from being walked on or pinched particularly at plugs and the point where they exit from the apparatus.
13. If using an extension cord, make sure the rated output of all units connected in aggregate does not exceed the maximum rated output of the extension cord. The rated output of the units plugged into the socket should in aggregate not exceed 10 amperes.
14. If the power cord or the mains plug is damaged, let a qualified technician replace it immediately.
15. Only use power cords which are marked as safety-proof.
16. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped. Besides others, you run the risk of suffering an electric shock.
17. All service work should be exclusively performed by qualified service technicians.
18. Do not use any high-power walkie-talkies or cellular phones near the unit.
19. If one of the following conditions occurs, **please disconnect the mains plug and call your dealer or technical support!**
    - Power cord or mains plug is damaged or worn.
    - Liquid penetrated the unit.
    - The unit was exposed to rain or high ambient humidity.
    - The unit does not function properly, even when following all the instructions in the manual. Only manipulate the controls as stated in the manual, wrong settings on the controls may damage the unit.
    - The unit fell and the housing was damaged.

Please note that this console is based on complex software and as you probably know from your own computer experience, software crashes can occur on occasion. But be assured, that we will do our best to keep them rare exceptions.

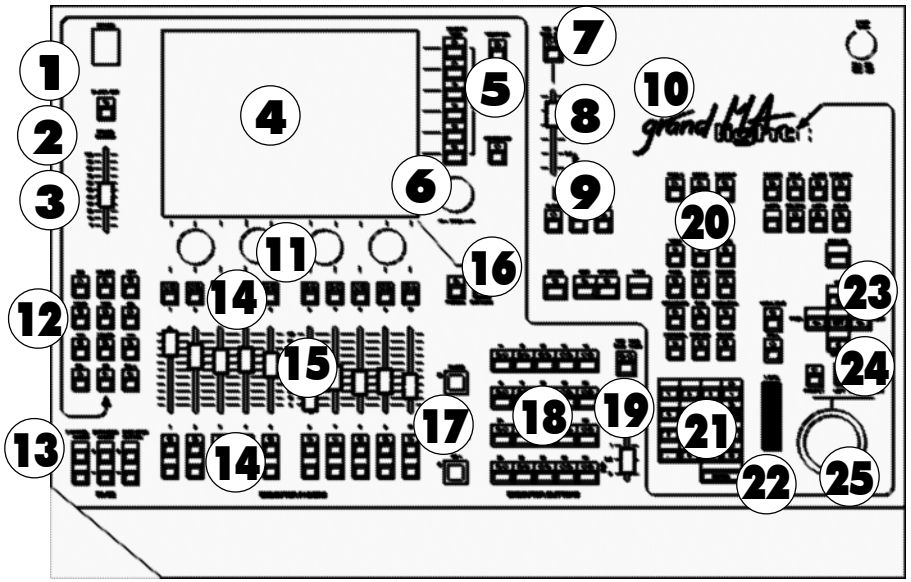
Electric shock warning on the rear of the *grandMA*

The unit should be serviced by qualified personnel only, as live parts may be exposed when

opening and/or removing coverings; besides others, you run the risk of suffering an electric shock.

1.7.1 Layout and Controls *grandMA* light

grandMA ultra-light: Items **7** and **17** do not apply (keys inexistent). Item ***22*** (Wheel) does not apply, can be controlled by Trackball (item ***25***) and Wheel key (item ***24***).



1 **Power switch**

2 **Blackout key** for Dimmer channels

3 **Grand Master** for Dimmer channels

4 **TFT Display** touch screen

5 **View / Macro keys**

6 **Encoder** for moving / scrolling the respective window contents

7 **Viewpool key** for opening a window on the TFT display with all the created VIEWS in the show. These can then be recalled up directly by selecting the required view.

8 **Background key** - If on the TFT display, Views are being overlayed by a menu (ASSIGN, EDIT, ...), you can use this key to bring up or hide the menu.

9 **Keyboard key** to bring up the Soft Keyboard on the TFT display.

10 **Manual setting of time** for Presets

11 **Encoder** for setting the attribute values (e.g. Gobo, Pan/Tilt, times, etc.)

12 **Keys** to directly execute functions like Go+, Go-, etc. for arbitrary executors, locking executors, SELECT key

13 **Page flipping** for Channel fader, Executor fader and Executor buttons

14 **Playback buttons** can also be defined as e.g. Go, Go-, Pause, Flash, etc..

15 **Executor faders** can also be defined e.g. as Master, Swap Master, X-Fader, etc..

16 **List keys**
Faders: will bring up small Executor windows for the EXECUTOR FADERS.
Buttons: will bring up small Executor windows for the EXECUTOR BUTTONS.

17 **Go+, Go–, Pause button** – Will only effect the default sequence. A default sequence can be assigned by using the ***Select key*** (indicated by the green title bar in the small EXECUTOR window displayed above).

18 **Executor buttons** can also be defined as e.g. Go, Go-, Pause, Flash, etc..

19 **Manual setting of times** for Executor buttons

20 **Choosing** Groups, Executors, etc. in combination using the numeric keypad

21 **Numeric keypad**

22 **Intensity wheel***

23 **Cursor keys** NEXT, PREV. Groupwise Calling up of scanner or dimmer channels one after the other.

24 **PAN / TILT key,** changing over the function of the trackball to mouse functions (LED off) or to Pan / Tilt functions (LED on)

Left / Middle / Right key for Mouse functions

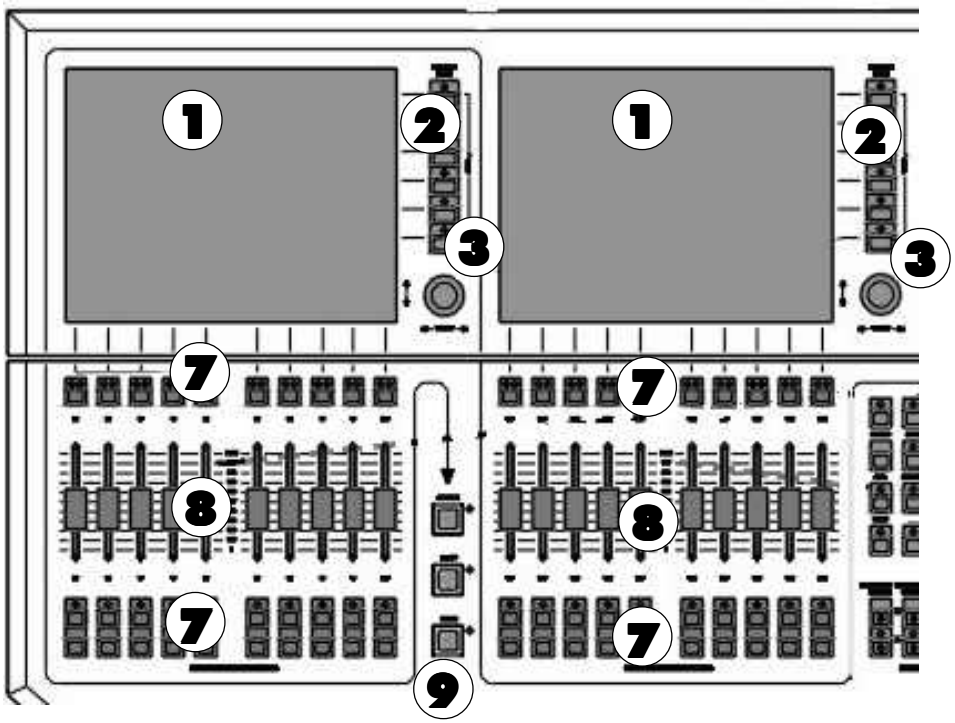
25 **Trackball** for Mouse or Pan / Tilt functions

26 **Socket for console lamp** 12V/5W

Differences to the *grandMA*

The software for the ***grandMA*** light and ultra-light and the ***grandMA*** is nearly identical.
The product will not be delivered with a hardware keyboard and an external mouse. An additional external keyboard and a mouse, however, can be connected on the rear of the unit.
Using the KEYBOARD key on the TFT display, a Soft Keyboard can be brought up that can be operated via the touch screen. The Soft Keyboard will only appear, if entries are possible.
If the trackball is switched to mouse function (LED in the PAN / TILT key is off), you can perform mouse functions using the trackball or the LEFT-MIDDLE-RIGHT keys. There are some limitations for the MICRO.

1.7.2 Layout and Controls *grandMA*



1 **TFT-Display** Touchscreen

2 **View / Macro keys**

3 **Encoders** – To move/scroll the respective window contents

4 **Encoders** – To set the attribute values such as Gobo, Pan/Tilt, times etc.

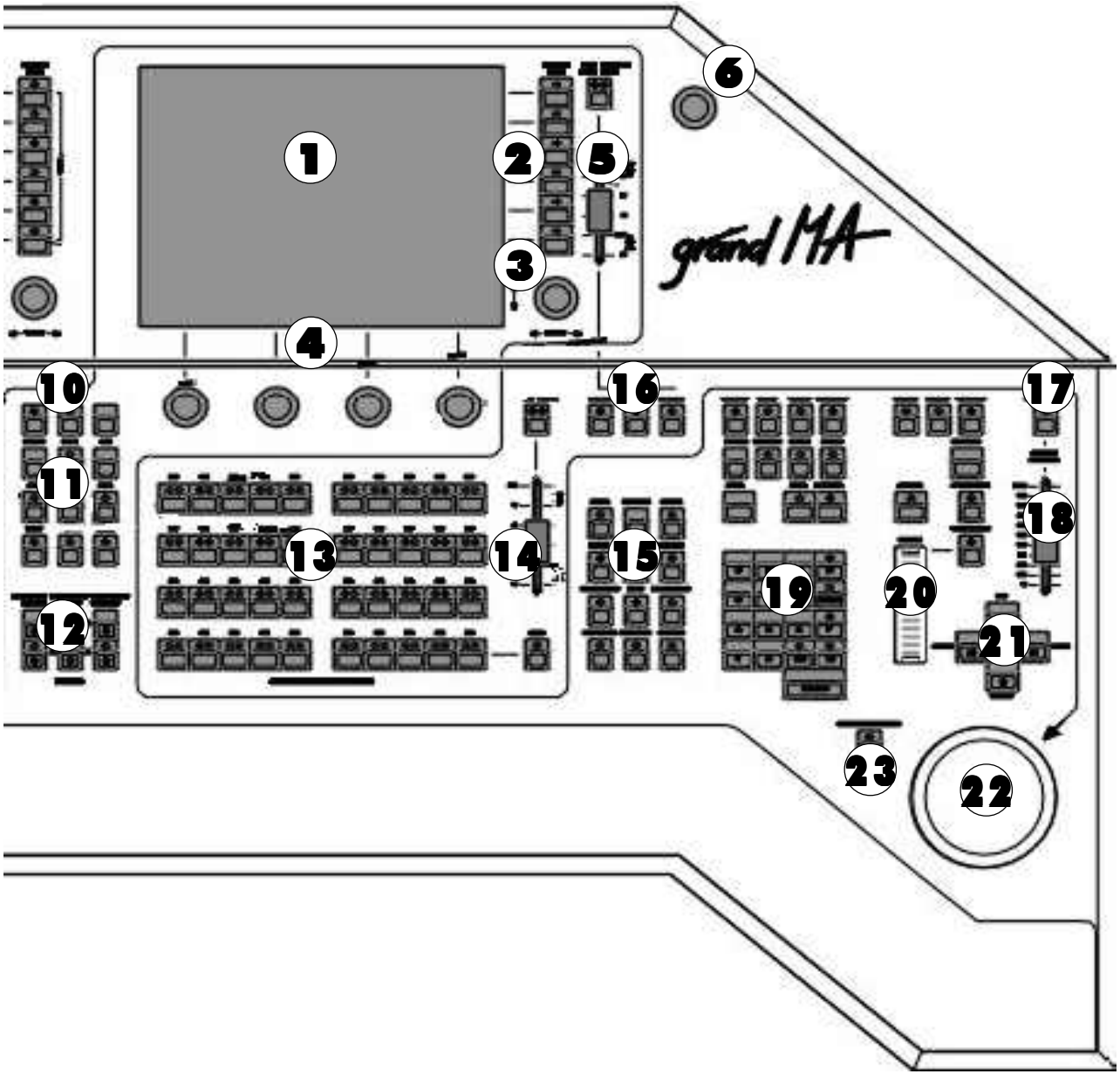
5 **Manual Time Setting** for Presets

6 **Yellow Knob** - To adjust the Touchscreen Panel

7 **Playback buttons** – Can be defined as Go+, Go-, Pause, Flash etc.

8 **Executor faders** – Can be defined as Master, Swap Master, X-Fader etc.

9 **Go+, Go–, Pause buttons** – Only effective for the default sequence. The default sequence can be assigned using the ***Select key*** (recognisable by the green title bar of the small EXECUTOR window above it).



10 **Select key** to address the Master Sequenz

11 **Keys** – To directly process Go+, Go– etc. for any Executor, or to lock Executors

12 **Page change-over** – ***For Channel faders, Executor faders and Executor keys***

13 **Executor buttons** can be defined e.g. as Go+, Go–, Pause, Flash etc..

15 **Select –** Cues, Groups, Executors etc. in combination with numeric keypad

14 **Manual Timing** – Setting for Executor-Buttons

16 **Blind, Freeze, Clear keys**

17 **Blackout key** for Dimmer channels

18 **Grand Master** for Dimmer channels

19 **Numeric keypad**

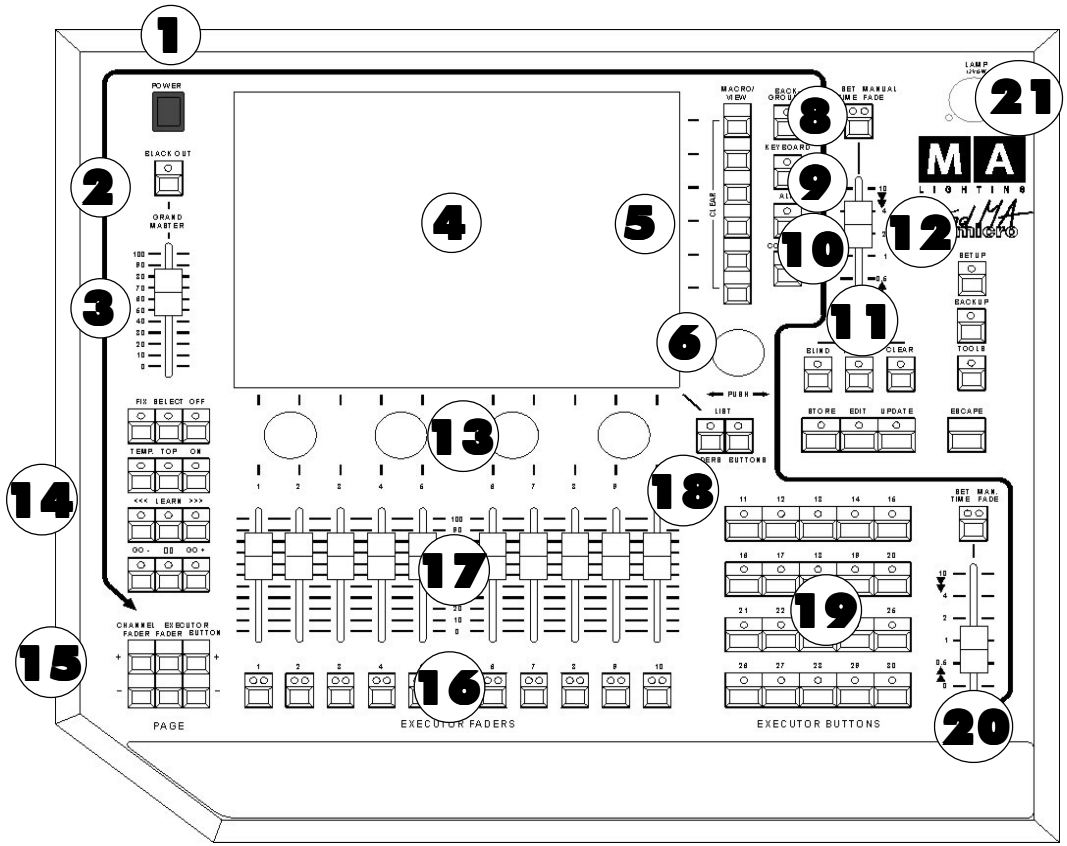
20 **Intensity wheel**

21 **Cursor keys** NEXT, PREV. Choosing Fixtures or Channels one by one within Groups**.**

22 **Trackball** for Pan / Tilt- or mouse function

23 **Trackball ON** If the LED in the key is on, the trackball can be used to modify the PAN/TILT value; if the LED is off, you can use the mouse cursor arrow; if the LED blinks, the mouse function can also be controlled using the PREV/SET/NEXT keys. The functions can be switched on/off in the Default menu ▲✻✻✻✻ **2.13**.

1.7.2 Layout and Controls *Micro*



1 **Power switch**

2 **Blackout key** for Dimmer channels

3 **Grand Master** for Dimmer channels

4 **TFT Display** touch screen

5 **View / Macro keys**

6 **Encoder** for moving / scrolling the respective window contents

8 **Background key** - If on the TFT display, Views are being overlayed by a menu (ASSIGN, EDIT, ...), you can use this key to bring up or hide the menu.

9 **Keyboard key** to bring up the Soft Keyboard on the TFT display.

10 **MA key** - without function

11 **COMMAND key** to bring up the Command menu

12 **Manual Time Setting** for Presets

13 **Encoders** – To set the attribute values such as Gobo, Pan/Tilt, times etc.

14 **Keys** – To directly process Go+, Go– etc. for any Executor, or to lock Executors

15 **Page change-over** – For Channel faders, Executor faders and Executor keys

16 **Playback buttons** – Can be defined as Go+, Go-, Pause, Flash etc.

17 **Executor faders** – Can be defined as Master, Swap Master, X-Fader etc

18 **List keys**
Faders: will bring up small Executor windows for the EXECUTOR FADERS.
Buttons: will bring up small Executor windows for the EXECUTOR BUTTONS.

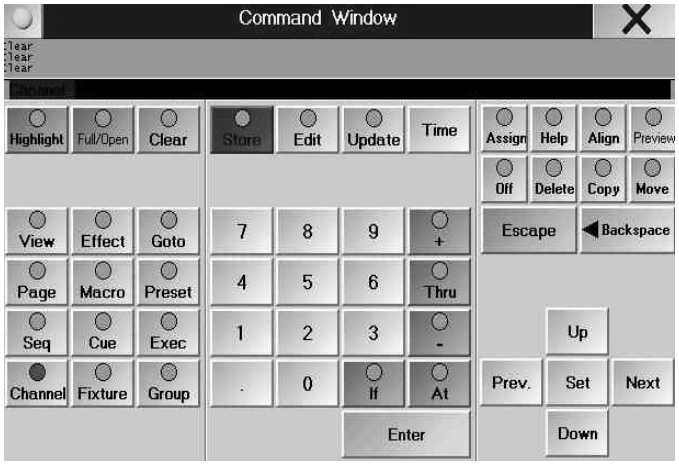
19 **Executor buttons** can also be defined as e.g. Go, Go-, Pause, Flash, etc..

20 **Manual setting of times** for Executor buttons

21 **Socket for console lamp** 12V/5W

An additional external keyboard, a mouse and an Trackerballhowever, can be connected on the rear of the unit.

NOTE: When using a mouse, you always have to connect an external keyboard, too.



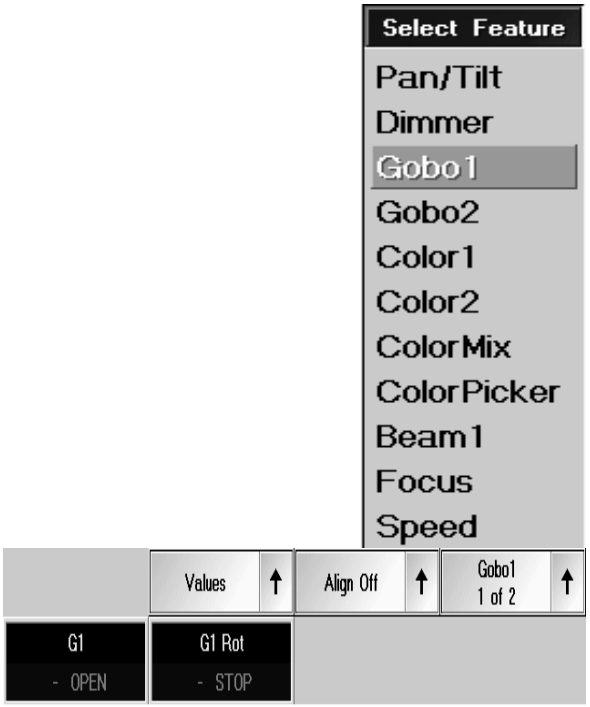
1.7.4COMMAND WINDOW (Micro)

This menu contains most of the Functions of a „big“ ***grandMA*** desk.
Pressing the Background -button the Command Window can temporary be removed from the screen. Commands are still waiting for completion
.

NOTE: Working with the REPLAY UNIT the COMMAND WINDOW is very usefull. Start COMMAND WINDOW F7-fuctionkey on the external keyboard.

1.8 Replay-Unit

see Chapter 14



1.9 General Operation

Touch screen

– Keys can directly be selected.
– In charts, individual cells can be selected. By using the Lasso function on the touch screen, you can also select several cells.
– You can simultaneously select individual, but also several Fixtures or Channels by clicking and dragging with the mouse on touch screen.
– Directly activating title bars of windows or opening options for the individual window by touching the corner icon.

Encoder on the right of the Display

– In the active window, the focus (coloured frame) or a highlighted cell (red/blue background) can be moved upwards or downwards. By pressing the Encoder when turning it, you can move the focus to the left or to the right.
– If a pulldown menu is opened, you can use the Encoder to scroll through the list. When you reach the desired value, you can select it by a pressing the Encoder.
– If in a chart, a cell is selected with a value or a time, you can open an entry window by pressing the Encoder. In this window, you can also use the Encoder to adjust the value, pressing the Encoder again will accept the new value.
– If a Fixture or a Channel is selected (coloured frame), you can open the options by shortly pressing the Encoder.

Encoder below the TFT Display

The currently chosen function is displayed above the appropriate Encoder.
The currently set value for the last activated lamp is displayed below the respective function. The values displayed (percent, decimal, ...) do always refer to the active window (e.g.: Fixture- or Channel-Sheet).
Use the encoder to modify the values of this function. If you press the Encoder while turning it, you can modify its sensitivity (default setting **2.13** item ***6***).

- By pressing the respective button, you can select the next function (in this case Gobo1). Pressing on the arrow will open a menu in which all functions are displayed and can be selected directly.
- Pressing on “Align Off“ allows you to select the individual Align functions. Pressing on the arrow will open a menu in which the respective function can be selected directly.
- Default setting is “Values“; by pressing the button shortly, you can switch to “Fades“ and, pressing the button again, to “Delays“. Pressing on the arrow will open a menu in which the respective function can be selected directly.

grandMA Hardware keyboard or *grandMA* light, ultra-light and Micro Soft-(TOUCH) Keyboard

– Views, Groups, Presets, Sequences, Effect groups, Forms or Macros can directly be named within the respective pool.
– Cue names can be adjusted in the EDIT menu, in the Tracking or EXECUTOR Sheet.

If the “Scroll Lock“ function is activated, all entries on the keyboard will be entered directly to the comandline (Scroll Lock LED on keyboard is lit). By pushing “Scroll Lock“ briefly, you can toggle this function ON or OFF.

grandMA Mouse or *grandMA* light and ultra-light and Micro-Trackball

When using a mouse on the Micro, you always have to connect an external keyboard, too!

The most effective way of working with the ***grandMA*** is to use the touchscreen and the encoders which are located next to the respective displays. The only means to change the size of windows, work within the Tracking Sheet or edit forms , though, is the mouse (or the Trackball, if the mouse function is on).

With the left key:

– Keys can directly be selected,
– Individual cells in charts can be selected,
– Several cells in charts can be selected simultaneously by clicking, holding and dragging them,
– Fixtures or Channels can be selected,
– Title bars of windows can be activated or options for the individual window can directly be called up.

With the middle key:

– The values of selected Fixtures or Channels can be adjusted.

With the right key:

– The options for this window can be opened by clicking on the title bar,
– The options can be opened by clicking on an individual Fixture or Channel.

OOPS Function*

By pressing the OOPS key, you can undo (step back) the last 20 operations.
Holding the OOPS key opens a window showing the 10 last entries on the right TFT display. Pressing the UNDO key will cancel the first entry on top of the list. **2.12** OOPS Function Options

Note: Please, switch off the Oops function in loud environments, as otherwise, the built-in harddisk may not function properly.

Entry window/Calculator

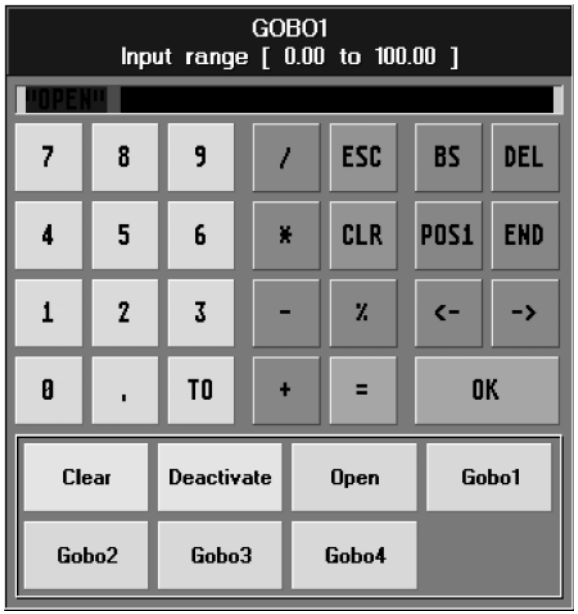
Open by pressing on one of the 4 Encoders below the display or clicking on the Buttons above the Encoders.

Or:

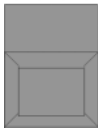
Click into a cell (indicated by the Focus - colored frame and/or blue background) and press on the Encoder on the right side of the display.
In this window, you can enter values or times and recalculate them.
Presets can be called up for the selected Fixtures or Channels.
If in the Executor Sheet or in the EDIT menu, a trigger call or time is selected, you can open this window by pressing the Encoder on the right side of the Display.
If Fixtures or Channels are selected, this window can be opened by pressing the respective keys for this function above the Encoder.
The title bar of this window will display the selected function. In the upper cell, the current value will be displayed.
Using the touch screen, the number pad or turning the encoder on the right of the display you can enter a different value or time, and accept it by pressing the OK key.
Left of the numbers, the following keys are displayed: H (for hours), M (for minutes), S (for seconds) and F (for frames). With these keys, you can directly enter times, if necessary.

or:

If a function is selected, keys for Clear, Deactivate and the individual presets are displayed in the lower part. If you



OOPS



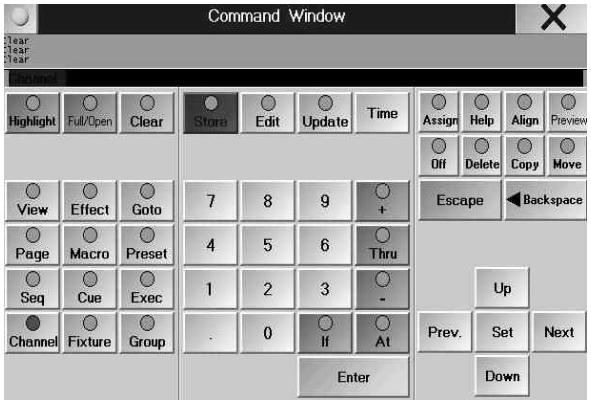
press CLEAR, the values of the selected Fixtures or Channels will be deleted. If you press DEACTIVATE, the active values of the selected Fixtures or Channels will be deleted.
If you select a Preset, it will be displayed in the upper bar, and you can select it pressing the OK key.
Entries can be deleted using the OOPS-key.

SOFT (TOUCH) Keyboard

On the ***grandMA*** light and ultra-light and Micro you can call it up by pressing the KEYBOARD key.
In the upper left cell, the entered text will be displayed.
Using the touch screen, you can select individual keys.
Pressing RETURN will accept your entry.

COMMAND WINDOW

On the grand MA, grandMA light and the ultra-light, you can open the Command Window using function key F7. On the MICRO, you'll find a dedicated COMMAND button. This window contains the most important buttons, here displayed as Softkeys; on the grand MA, granMA light and ultra-light, the buttons can be used as alternative means of entry, on the MICRO, you can only use the Command Window.



1.10Quick Reference

After many years of experience we have lost our illusions about any user to be willing to read an entire manual before playing with a new toy. But here are some tips which may help you to find your way around.

1.10.1 Basics

The ***grandMA*** is a highly specialised computer with up to 5 monitors. Many functions will work as you are used to from your PC or MAC.

Main supply: 90–230V

The mouse in its drawer (***grandMA*** only) or trackball on the ***grandMA light*** & ***grandMA ultra-light, Ultralight and Micro***:

– Left click selects a field for keyboard or encoder input, etc.
– Right click goes to Modify (opens windows with options, sorting columns by clicking on the headline...)
– Pressing and holding the middle mouse key changes output values (Hold and Move)

The displays (select one by a click into empty space)

The ***grandMA*** offers different windows: Menus with information and control keys, spreadsheets, key groups, dimmer channel listings and fader symbols

– Clicking and dragging using the left mouse key on the headline moves a window, you can alter the size by clicking and dragging the left and bottom edges.
– Right clicking with the mouse on the headline of a window opens options menu for that window.

Spreadsheets (comparable to those used in Excel or Access):

– Click and drag with the left mouse key and you can select a range of cells (not on all screens possible)
– Left click on a column headline will resize or move the column
– Right click on a column headline will sort by this column

Emergency help: Like any computer, the ***grandMA*** may crash. To resolve a crash:

1. Perform a reset by pressing CTRL-ALT-DEL or the RESET key on the backside of the unit or Power Off on the Ultralight and Micro.

Only if this doesn't help:

2. During the booting use „Delete ActShow" to delete the current Show. **13** Utility Menu

In case of any further problem, please feel free to contact your dealer or our HOTLINE +49-5251-688865-99.

1.10.2 Setup and start

The easiest way is to use the BACKUP key and load a demo-show or start show. Alternatively:

1. SETUP key: Will allow you to select and patch the number of dimmers and fixtures, create presets, groups and effects.
2. Right click or touch in any empty display:

– creates, moves and resizes a FADER or CHANNEL window for dimmer control and FIXTURE, GROUP and different Preset windows (PAN/TILT, GOBO...) for fixtures.

1.10.3 Direct access

The ***grandMA*** offers many different ways of controlling dimmer values and fixture attributes. For speed, we give you only one example for each of them.

Setting values for dimmers:

CHANNEL FADER "–" or "+" key toggles the motorised faders to control single dimmer channels.
– "+" and "–" scrolls in blocks of 20 (10 on the ***grandMA light***) dimmers.

– The set fader values are shown in the dimmer display.
Channels can also be selected and modified by the mouse, wheel, encoder and the keypad.
With the LINK function (right on top of channel and fader sheets), the window will automatically scroll to show the channels set for the faders.

Controlling Fixture attributes:

GROUP window

Select a fixture by its key (or click on the name of a fixture in the fixture sheet).

GOBO, COLOUR ... window

TIPP Open a preset for the selected unit (if no presets are displayed, run the selected function via an encoder). Pressing and turning the encoder allows for fine tuning

.

1.10.4 Storing Settings

The STORE key of the ***grandMA*** is very flexible.
If the STORE key is flashing, you can switch it off with a second press or use ESCAPE.
Example: Select some fixtures and set the color wheel
– STORE + one of the buttons above or below an EXECUTOR fader (make sure you have toggled back from CHANNEL to EXECUTOR): Stores the color setting as a cue on that Executor.
– STORE + one of the buttons of an EXECUTOR fader, where a cue was already stored, gives you the option to overwrite, merge information or create a second cue. **1.10.7** CREATE LIST
– STORE + a cell in the GROUP window: Stores the chosen Fixtures as a new group (enter a name via keyboard)
– STORE + any cell in the preset COLOUR window: Stores the values as a color preset (enter name via keyboard)
– STORE + one of the VIEW keys on the right hand side of the displays: Stores the layout of the screen, the mouse position, etc. as a view (enter a name ...)

TIPP With STORE + VIEW key you can store screens individually or all console wide.
In the ASSIGN menu, you can enter names sequences of cues.

1.10.5 Selecting and activating channels, fixtures and functions

Selecting and Activating have different meanings and are important terms and concepts when working with the ***grandMA***.
Selected fixtures or channels are what you are currently working with, you can tell what is selected by their names in fixture / channel sheet being yellow. Active values determine which channels and parameters are to be stored in the next cue and will be controlled by this cue later on. Values with a dark red backround will be stored in the next cue, values with a bright red background are currently under your control and will also be stored in the next cue. Channels not active when the cue is stored will not be affected by the playingback of this cue. Selected fixtures or channels are automatically deselected if a setting was altered and new fixtures selected (a single press of the CLEAR key will do the same).

Changing the selection:
– Any channel or function, being controlled in Direct Access mode, is automatically marked as selected.
– Pressing the CLEAR key several times, deletes the whole selection.
1st CLEAR: deselects – 2nd CLEAR: deactivates– 3rd CLEAR: deletes all values set by direct access and returns the values to their defaults or to being controlled by playback.

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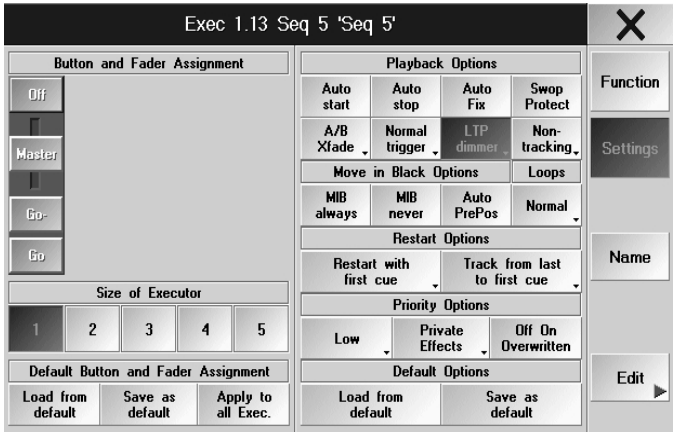


– Selecting a channel, fixture or function multiple times can be used to modify an activation
1st selects – 2nd activates all parameters – 3rd deactivates all parameters
By holding the STORE key and selecting ALL, the activation will be ignored and the complete console output stored as a cue.

1.10.6 Timing – Fade times (FADE) and Delays (DELAY)

The ***grandMA*** offers two different ways of storing time settings for a cue:
1. BASIC X-FADE and SNAP DELAY
With STORE, a basic fade time can be set for all typical fader channels, whereas SNAP DELAY will only work for channels marked as snap channels in the Patch menu.
2. TIME key for individual durations per channel
With TIME, the status windows can be switched to the FADE or DELAY layer, where individual fade and delay times can be set for each channel. These durations will be stored in the cues and will overrule any basic duration.

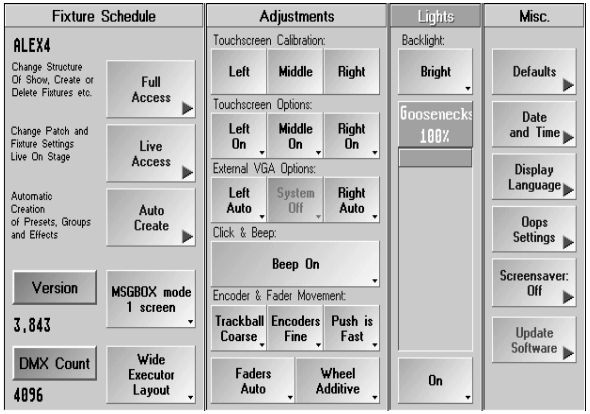
1.10.7 CREATE LIST

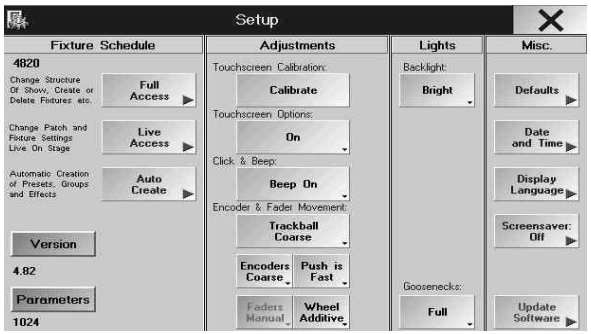
When storing a cue to an Executor already containing a cue, the ***grandMA*** offers the option to create a second cue and start a cue list, which may be replayed as a Chaser or sequence later on.
In the ASSIGN menu, you can preset the Cue list as tracking or non-tracking, respectively.
TRACKING CUELIST (typically for moving light control or theatre applications):
When working with a tracking cuelist it only makes sense to store values that have changed. On playback, the ***grandMA*** will hold a parameters value until it is given a new value by subsequent cues.
NON-TRACKING CUELIST
With a non tracking cuelist, all values to be playback have to be stored in each respective cue, as all values not stored within a cue, will be switched off (“0” or default).

1.10.8 Playback buttons and faders

– The motor faders allow to work on different pages simultaneously. With OFF, playback of cues loaded onto executors can be stopped.
– With the ASSIGN + EXECUTOR buttons, you can define, which sequences with which functions are to be playbacked on executors.
– The 12 function keys can be used for any Playback (OFF - EXECUTOR1).

TIPP To call up a cue with a fader, it has to be activated via GO+, TOP or ON.
Watch out for the GRANDMASTER - or simply switch it off in the Setup menu.





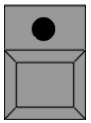
SETUP menu on the MICRO

2 Setup

The Setup menü is displayed only on the right screen (grandMa). In case of a failure of these screen press F3 to display the menues of this screen on an external screen.*

2.1 Selecting, patching, creating and editing of fixtures and dimmers, Stage Setup (Edit Show)

SETUP



● press ***SETUP***

FIXTURE SCHEDULE

Full Access

In the Full Access menu, you can define the number of Scanner and Dimmer channels and assign DMX addresses. Furthermore, the stage can be adapted and Scanners and Dimmers be positioned accordingly.
Only in the Full Access menu can you modify the complete Show. If using the console in the Multi User mode, you can access this menu only from a console. **2.2** All Access
When adapting a Show, a copy will be used; the modifications will only be available when they are saved.

Accessing this menu will take a few seconds, as all Fixtures (approx. 300) will be loaded from the hard disk.

Live Access

There are certain limitations when it comes to modifying a Show. These modifications will be executed **immediately**. In the Multi User mode, the Show data can be adapted by multiple users simultaneously. In the Live Access menu, you can e.g. assign DMX addresses. Furthermore, the stage can be adapted and Scanners and Dimmers be positioned accordingly. Additionally, adaptations can be made in the Attribute Setup.
It is not possible, to sign on or delete new lamps in the Show.
The PDA remote control does have the status of Live Access only.

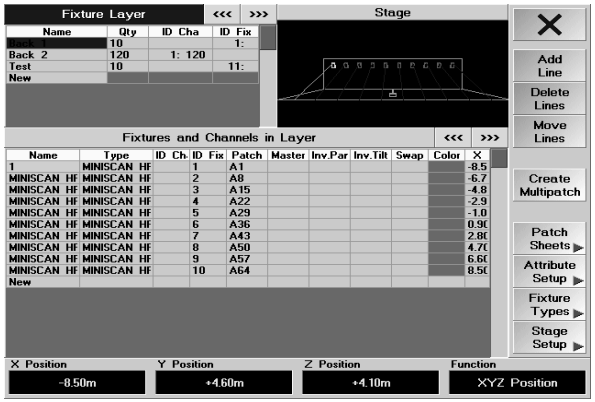
AUTO CREATE

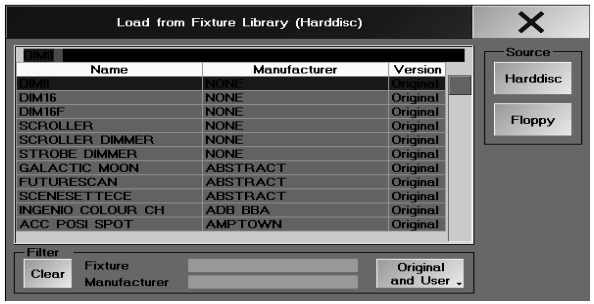
In this menu, you can e.g. have presets automatically created for all your fixtures and dimmers, as long as those presets are already contained in the internal library. Premade Effects and Groups for each Fixture or Dimmer channel can also be created. **2.11** Creating presets, effects and groups automatically

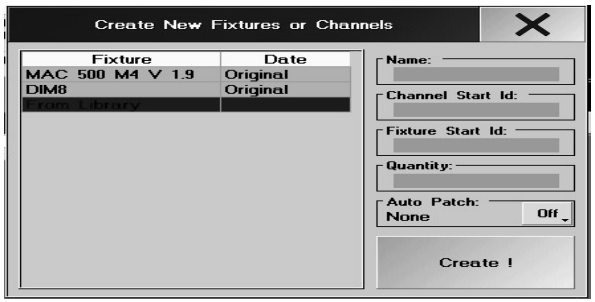
NOTE:

All text marked with *, does not apply to the grandMA MICRO.

All buttons marked with **, are located in the grandma MICRO's COMMAND WINDOW only.







2.2 Menü Full Access oder Live Access

● press ***Fixture Layer***
Here, you can create Scanner and Dimmer groups.
These groups can be modified later without any problems, e.g.: increase number, change the lamp type etc.
Additionally, you have an overview over the number of all signed-on lamps and their ID numbers for Channel and Fixture.e.

2.2.1 Creating groups with Scanners/Dimmers (Fixture Layer)

● Press the "Add Line" key (Fixture Layer must be active, i.e. header dark blue).
A window will open, where you can enter a name for the group and must confirm this action.
Now, the "Create New Fixtures or Channels" window will open. When opened for the first time, only "From Library" will be displayed here and is already selected (indicated by its blue background).
● When selecting "From Library", the library window will open:
● By turning the Encoder, you can only choose a lamp type (blue bar).
● Pressing the Encoder will accept the chosen lamp type and close the window.
- To load a lamp type from floppy, press the "Floppy" button. Now, the Scanners present on the floppy will be displayed and can be selected and loaded.

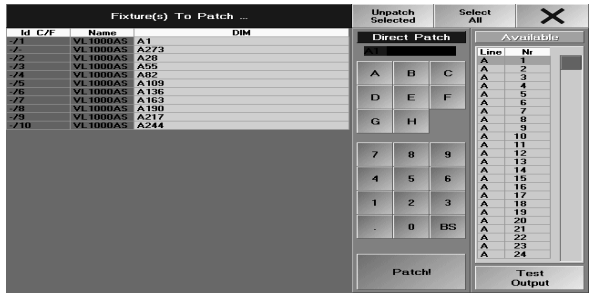
For conveniently localizing scanners (fixtures), the list can be sorted by name, manufacturer or date. Example: Sort alphabetically: Make a right mouse click on NAME. Clicking once will sort the list A–Z, on the second click Z–A.

or:

You can use a search filter: Select the manufacturer column on the side of "Filter", and enter the first character of a manufacturer. Now, only the models produced by this manufacturer will be displayed.t.

On www.ma-share.net , you will find a forum to setup and download self-created or altered Fixtures.

Channel Start Id:
● Here, you can set the first ID number of the Dimmers. These are then displayed in the Channel and Fader Sheet. The Dimmer channel of Scanners could also be used in the Channel and Fader Sheet. In order to do so, you would have to assign "Channel-IDs" for the Scanners first.
Fixture Start Id:
● Here, you can set the first ID for the Scanners. These are then displayed in the Fixture Sheet.
Dimmer channels can also be used in the Fixture Sheet. In order to do so, you would have to assign "Fixture IDs" for the Dimmer channels first. .
Qty (Quantity):
● Finally, you have to set the number of selected fixtures under „Quantity" (numeric keypad or keyboard
Autopatch:
● displays the next available DMX-channel; in position ON this channel will be used after presing CREATE; in position OFF (default) any other available channel can be used. **2.2.2**
● Pressing "Create !" will accept the settings for generating fixtures later on.



2.2.2 Patching Scanners/Dimmers

In The lower part of the window shows the Scanners/Dimmers of the selected

- Select a fixture in the “Patch“ column (blue background).

If all fixtures of these “Fixture Layers“ are to be patched one after the other, you can select all of them together by clicking on the column title (in this case PATCH). Now, all fixtures are displayed on a blue background.

Pressing the Encoder will open this menu:
Below “Direct Patch“, the first free
DMX channel is displayed.

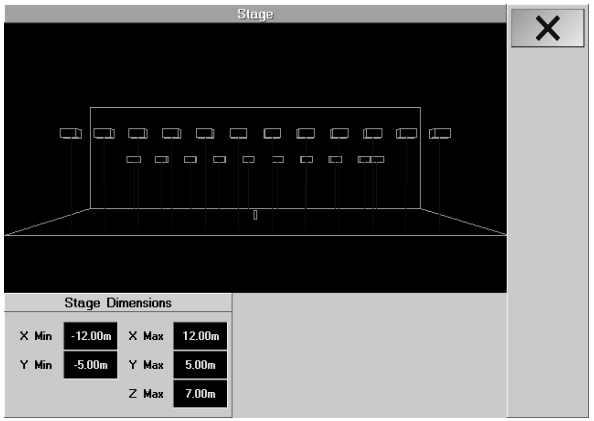
- First, you have to set the DMX output (e.g.: A, B, ...), then the (first) DMX channel.
- Finally, press the “Patch!“ key. That’s all.

or:

All free channels are displayed in the right column. By turning the Encoder, all invisible channels can be displayed and selected. Pressing the Encoder will accept the channel.
If the TEST OUTPUT button is pressed (green background), the selected DMX output channel is set to 100%. This accelerates the localizing of a patched channel in the stage setup.
This function will only affect fixtures, whose DMX signal is directly output by the console. Consoles in Slave operation or fixtures, whose signals are output over the MA-Net, cannot execute this function.
Now, the selected and patched fixtures can bei positioned in a 3D stage display.

- Leave menu with X .
- press ***Save*** to save the modified settings
- ***Don´t Save*** will discard the modifications
- with ***Cancel*** you stay in this menu.

2.2.3 Position of fixtures

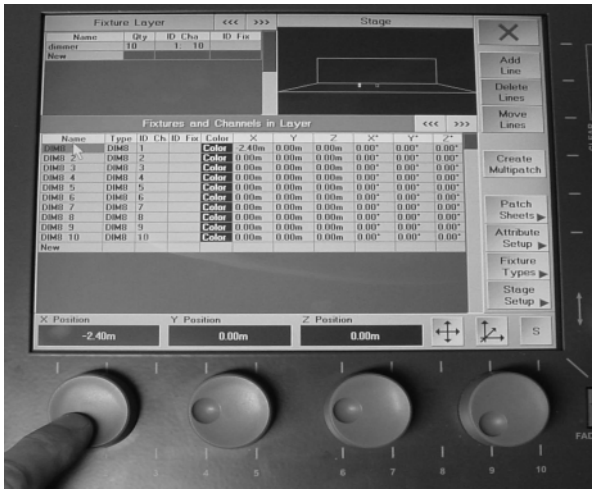


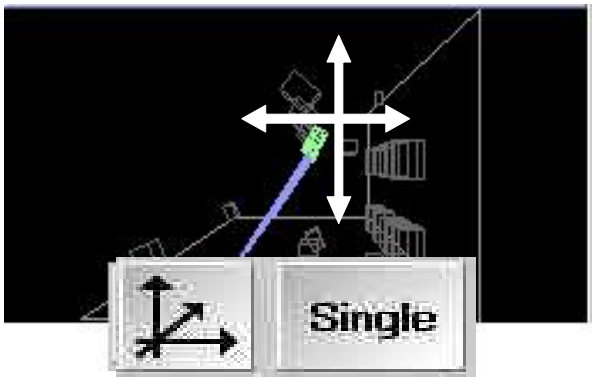
In the upper right part of the window, you’ll find a simplified representation of the stage that can be used to position the fixtures. Settings will also be taken over onto the ***grandMA*** 3D.
If this part of the window is active (title bar “Stage“ is displayed in dark blue), you can modify the stage view by turning or turning plus simultaneously pressing the Encoder.

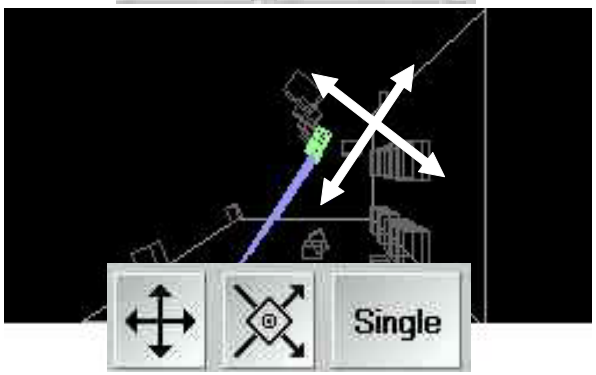
Setting the stage size

In the geometrical system of the ***grandMA*** (Stage window) or in the ***grandMA*** 3D, you can position objects in the three-dimensional space.
It is modelled on the geometrical system used in architecture: The X/Y level is defined as base area (stage) and the height as Z axis.
To adjust the stage size,

- press ***Stage Setup*** .
- Click on the values and enter a value in the entry window. (the values do always refer to the centre of the stage)
- By turning or turning and simultaneously pressing the Encoder, you can change the stage views.
- Close menu with ***X*** .







Positioning fixtures:

You can only set the specific group selected in the Fixture Layer – it is not possible to select fixtures from the small Stage window. To gain a better control, click on the small STAGE window (title bar turns dark blue) and change the stage view using the Encoder right of the Display (turn or turn and press the Encoder).

- in the ***FIXTURE LAYER,*** select the fixture type
- in the FIXTURES AND CHANNELS IN LAYER, select one or more fixtures
- set the positions and targets of the fixtures using the 3 Encoders (shift linear on the x, y, and z axis, or rotation around the x, y, and z axis) – check out results in the STAGE window. The values set will be displayed in the back part of the table. Press and simultaneously turn the Encoder (right of the Display), to change the table view. Turn it, until the columns for Position X, Y, Z and Rotation X°, Y°, Z° are displayed.

or

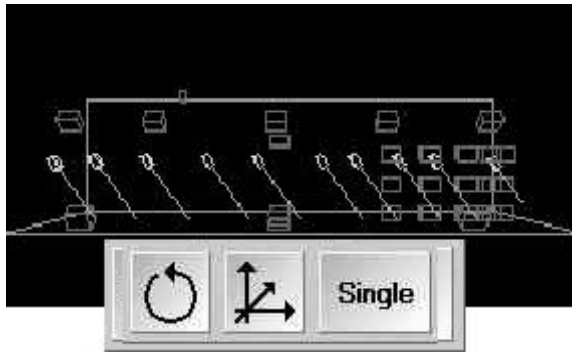
- highlight a value directly
- press on the right Encoder
- enter the value using the Calculator
- confirm with ENTER

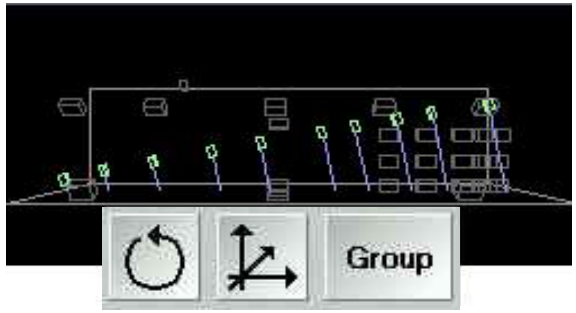
Shift linear (S/Gs have no importance)

- select one or more fixtures
- select the Linear icon
- select the space-axis icon
- shift the fixtures along the space axes using the Encoder

Shift linear tilted (S/Gs have no importance)
Only for rotated fixtures; if the fixtures were not rotated before, this function is equal to the one described above

- select one or more fixtures
- select the Linear icon
- select the Axis icon
- shift the fixtures along the fixtures' axes using the Encoder





Rotation S(ingle):

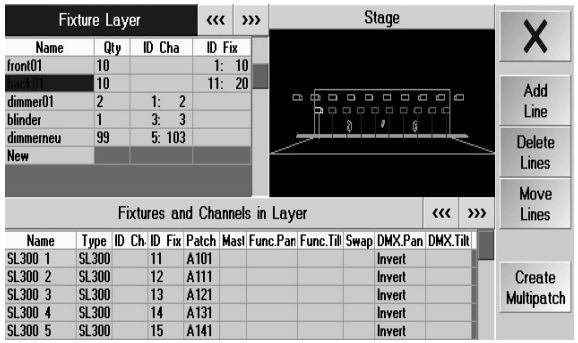
- select one or more fixtures
- select the Circle icon
- select the ***„S“***
- rotate each single lamp by turning the encoder

Rotation G(roup):

- select multiple fixtures
- select the Circle icon
- select the ***„G“***
- rotate the fixtures „in traverse“ around their virtual traverse using the Encoder

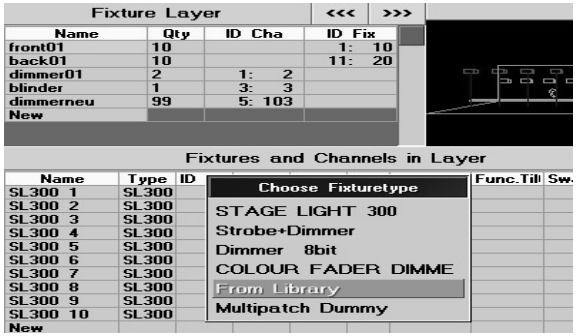
- Press „X“ to leave the menu.
- Press „Save“ to save the settings.
- Press „Don’t Save“ to discard the settings.
- Press „***Cancel“*** to stay in this menu.

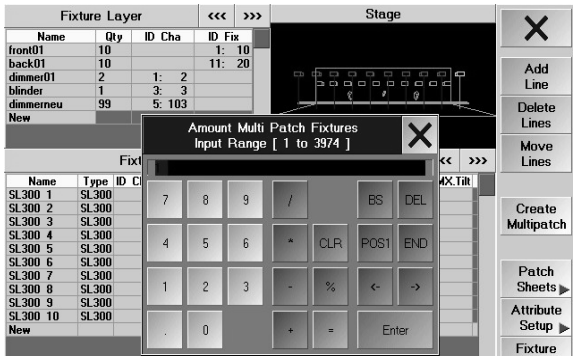
The „ALIGN“ function will be of great help and save you quite some time.


Fixture Layer
Stage
X
Name Qty ID Cha ID Fix
front01 10 1: 10
10 11: 20
dimmer01 2 1: 2
blinder 1 3: 3
dimmerneu 99 5: 103
New
Add Line
Delete Lines
Move Lines
Fixtures and Channels in Layer
Name Type ID Ch ID Fix Patch Mast Func.Pan Func.Tilt Swap DMX.Pan DMX.Tilt
SL300 1 SL300 11 A101 Invert
SL300 2 SL300 12 A111 Invert
SL300 3 SL300 13 A121 Invert
SL300 4 SL300 14 A131 Invert
SL300 5 SL300 15 A141 Invert
Create Multipatch

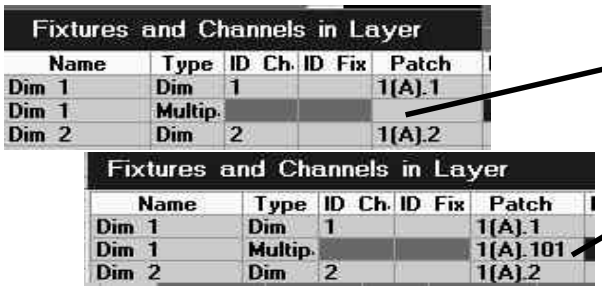
2.2.4 Adjusting the Fixture Layer

- Fixture Layer must be active: By shortly clicking on the title bar, it will be displayed in dark blue
- Select group of Fixtures (Layer).
- Add Line: A new group can be inserted in front of the selected group. Proceed like indicated 3 pages earlier: Creating groups with Scanners/Dimmers.





Create Multipatch


Fixtures and Channels in Layer
Name Type ID Ch. ID Fix Patch
Dim 1 Dim 1 1(A).1
Dim 1 Multip.
Dim 2 Dim 2 1(A).2
Fixtures and Channels in Layer
Name Type ID Ch. ID Fix Patch
Dim 1 Dim 1 1(A).1
Dim 1 Multip. 1(A).101
Dim 2 Dim 2 1(A).2

● Delete Line: The selected group is deleted. All fixtures with all settings in this group are deleted..
● Moves Lines: The selected group can be moved to another position in the table. If the "Moves Lines" button was used, this will be displayed in red. By selecting a new position in the table, the group will be moved..

2.2.5 Adjusting individual fixture groups

Select a group in the "Fixture Layer"; this will now be displayed below:

Adding identical fixtures

● Select "New" (dark blue) and shortly press the Encoder (right to the Display). The "Create New Fixtures or Channels" window will open. In this window, all types of fixtures are displayed that are already present in this show.
● Select the type of fixture by turning the Encoder. Proceed like indicated, 3 pages earlier: Creating, patching and positioning groups with Scanners/Dimmers.

Adding new fixtures

● Select "New" (dark blue) and shortly press the Encoder (right to the Display).
The "Create New Fixtures or Channels" window will open.
● Now, choose "From Library". Proceed as indicated 3 pages earlier: Creating, patching and positioning groups with Scanners/Dimmers.

Exchanging fixtures

● Select the fixtures to be exchanged in the "Type" column (dark blue). You can also select several or all fixtures..
● Shortly press the Encoder (right to the Display). The "Choose Fixturetype" window will open.
● Select a fixture that was already present in the show by turning the Encoder, and accept it by shortly pressing on the Encoder. The fixture still has to be patched.

or:

● Select "From Library" for a new fixture, and shortly press on the Encoder. Proceed as indicated 3 pages earlier: Creating, patching and positioning groups with Scanners/Dimmers.

Multipatch (assigning one DMX channel for multiple fixtures/dimmers)

Makes sense, if several fixtures are always to be triggered at the same time (but cannot be dimmed individually). To do so, you make a arbitrary number of „copies" of a fixture.

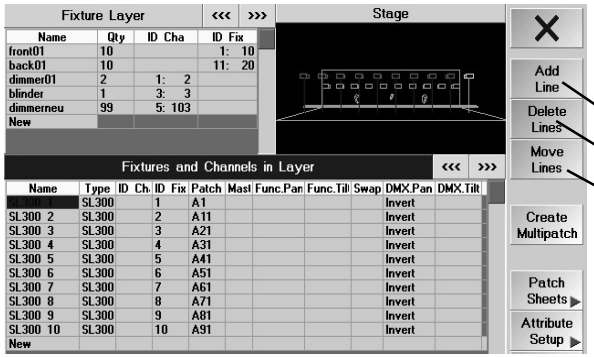
● select the fixture that you want to „copy"
● press ***Create Multipatch***
● In the entry window, enter the number of fixtures to be triggered by the same DMX channel

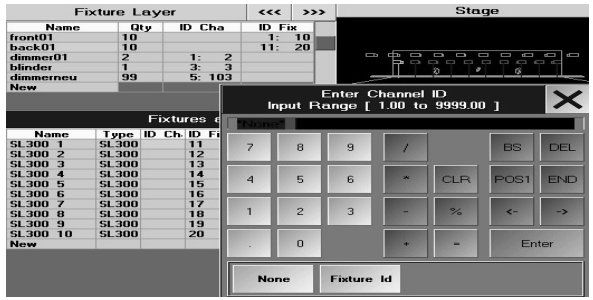
In the fixtures list, you will now find the copies below the fixture. In the TYPE column, you will find „Multipatch Dummies" for the copies. And you can position the fixtures, to use them in the Stage window or on the grandMA 3D.

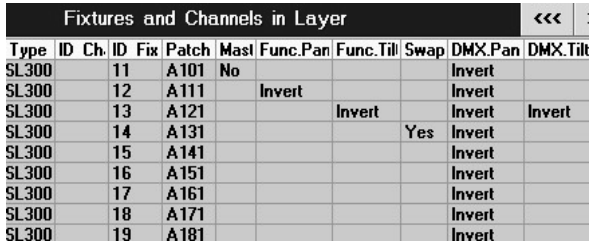
Note: After a Multipatch, you'll find no DMX addresses for the dummies, as these will automatically be given the same DMX address, name and ID as the original fixture.

It is not possible, to enter the same address for different fixtures in the Layer Sheet. In the fixtures' Settings menu, the same addresses have also to be entered (see manual of the fixture manufacturer).

TIP: If you want to multipatch fixtures with different addresses (set on the fixture itself), you can enter these after the Multipatch in the Layer Sheet (of course only, if not used by other fixtures).







Inserting, deleting or moving fixtures

- Select Fixture Layer.
- Select a fixture. Pressing one of the buttons will have the following effects:
- Add Line: Inserts a new fixture in front of the selected fixture.
  Delete Line: Deletes the selected fixture. And all settings for this fixtures are deleted, too..
  Moves Lines: Moves the selected fixtures to another position in the table. If using the “Moves Lines“ key, this key will be displayed in red. By selecting a new position in the table, the fixture will be moved to that new position..

Assigning fixture names

- Click on the fixture’s name, enter a name directly, and confirm with Enter.

TIPP ***If a space and a number is added an automaticly enumerate of the names is made.***

Adjusting ID Cha and Fix

- Select one or more cells under ID Cha or Fix and press the Encoder. A window will open, in which you can enter the IDs that will then be accepted, when Enter is pressed. Pressing “None“ will delete them. ***Please avoid any overlappings.***

Switching the Master (GRANDMASTER FADER) off:

- Select one or more cells under Master and press the Encoder.
- Now, select “No“ and press the Encoder one more time. If GRANDMASTER FADER is switched off, this will be indicated by a “No“ in the respective cell.

Func. Pan / Func. Tilt

- Select one or more cells under “Func.. Pan“ or “Func. Tilt“ and press the Encoder. Now, select “Invert“ and press the Encoder one more time. If a function is inverted, this will be indicated by a “Invert“ in in the respective cell.

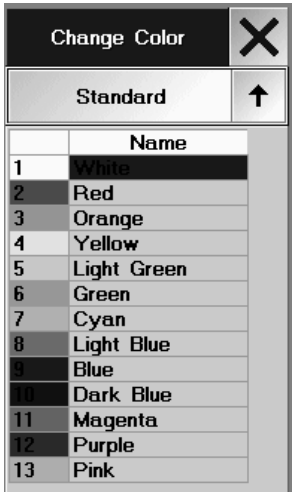
DMX Pan / DMX Tilt

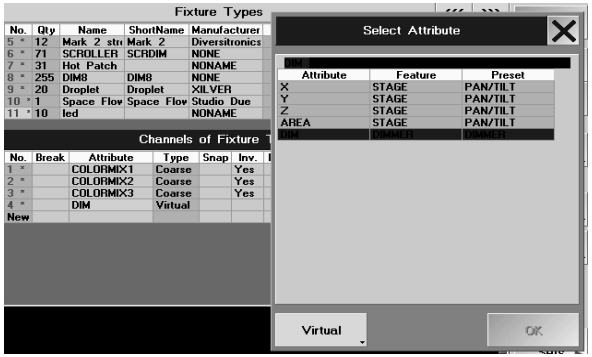
Here you can invert the DMX - signals for Pan and Tilt functions - the signals are only inverted in the DMX -Output, not for the visualizer; this means, that movements in the visualizer and on stange will differ.
Select one or more cells under “DMX.. Pan“ or “DMX. Tilt“ and press the Encoder. Now, select “Invert“ and press the Encoder one more time. If a function is inverted, this will be indicated by a “Invert“ in in the respective cel

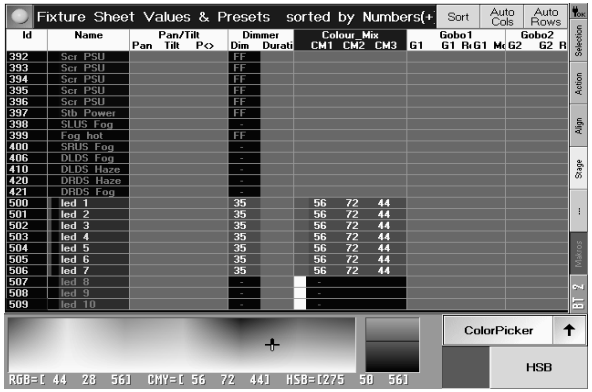
Changing from PAN to TILT and vice versa

Select one or more cells under “Swap“ and press the Encoder. Now, select “Yes“ and press the Encoder one more time. If PAN and TILT are changed, this will be indicated by a “Yes“ in in the respective cell.

TIPP This is where the useful „PAN/TILT trackball orientation“ can be set.
This can only be done in the Live Access menu.Check it out! Select a fixture, press HIGHLIGHT and let the Trackball „run“. Modifications will only be available after they have been saved. In cases like these, the HIGHLIGHT key, among others, is very useful; if you keep the key pressed, selected lamps flashes for better identification.







Assigning colors for Dimmer channels

In the STAGE window or for the ***grandMA*** 3D, this is where colors can be assigned for the individual Dimmer channels (color filter foils.

- Select one or more cells under “Color“ and press the Encoder.

The Change Color menu will open.
In this menu, you can choose between different color tables (Lee, Rosco, etc.). Above each color, the currently selected color table is displayed (here “Standard“).

- By shortly pressing the key, you can switch to another color table. Pressing the arrow will open a menu, in which all tables are displayed and can be selected directly.

Having decided for an individual table, you can choose a color using the Encoder and accept it by pressing the Encoder once. If a color has been assigned, this will be displayed in the respective cell..

- Close menu with ***X***..

RGB-Lamps and LED-Beamer without dimmer

For this types of lamps grandMA can create an virtual dimmer.This means, that the software simulates the dimmer function.The user only has to choose this function and can operate these lamps as any other dimmer-type lamp.

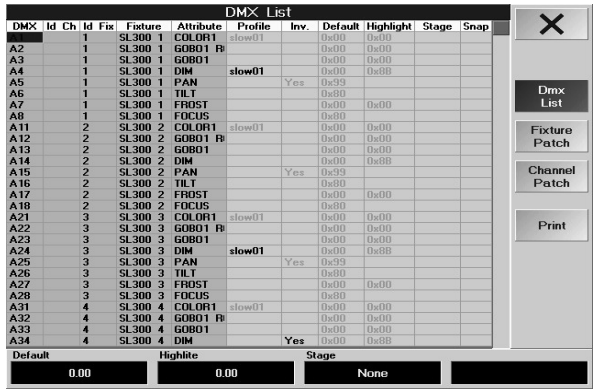
- Sign on the new lamp in FULL ACCESS **2.2**
  If no lamp of this type is in the library, create your own lamp ***2.6***
- In CHANNELS of FIXTURE TYPES create 3 channels with attribut COLORMIX and switch the column INV to YES.

Create another channel with attribute DIM and select Virtual in the SELECT ATRIBUTE menu. Confirm with OK.

In the Fixture Sheet the dimmer channel and the 3 colour channels are displayed and can be operated, although only 3 DMX-channels are covered; the virtual dimmer channel does not cover an own physical channel.

- If other channels than Colormix 1-3 should be affected b y the dimmer, set collumn ***REACT on DIMMER*** to ***linear*** or ***invers***.

2.3 DMX List -Single Channel-specific Adjustments for the Current Show



● Press the ***PATCH SHEETS*** key in the Full or Live Access menu to activate this menu.
This menu will only display the actually patched channels. All changes made ***here*** will ***only*** affect the ***current show***!

- This column will show the **individual**, addressed DMX channel.
- Will show the ID for Channel and Fixture. The IDs can be changed without affecting the show, e.g. for a better display on the Fixture Sheet.
- The name of fixtures and dimmer channels assigned to the individual DMX channels.
- The functions of the individual DMX channels.
- In this column, a profile can be assigned to this channel. **2.8** Creating, Assigning and Deleting Profiles
- Within this column, the respective DMX channel can be inverted. A click into the cell will activate this function. Press the Encoder (right to the Display). Select Yes for „Inverted“, No for „not inverted“ or Original (Library setting will be used) and accept them by pressing the Encoder one more time. An inverted channel will be indicated by a YES in the respective cell. These inverted channels are not used for the visualizer; this means, that movements in the visualizer and on stange will differ.
- ***DEFAULT***: This value will be output if no CUE, Sequence, Preset or Direct Access addresses the fixture or dimmer channel.

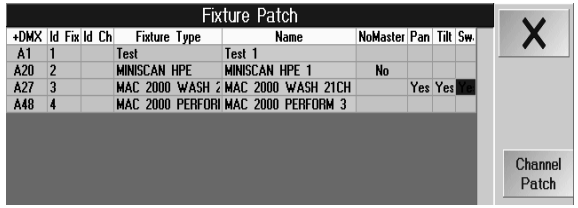
This setting can be used for PAN/TILT so that a moving light can start being manipulated from a sensible and optimum position. You can change values by selecting the cell and adjust it by using the right Encoder (below the Display). These values can be set by selecting the respective cell with a click. n.

- The HIGHLIGHT function is used to temporarly override a fixtures current settings making it easier to see on stage and speed up the procedure of programming positions of the selected fixtures. The HIGHLIGHT values for individual DMX channels can be set by selecting the respective cell with a click. A value can then be entered within the activated window. You can adjust the value by using the second Encoder (below the Display).
- ***STAGE*** (not yet available in version)
- ***SNAP***: New values for this channel will ignore cue timing and will execute in 0 seconds. Activate by a click on the cell. Press the Encoder (right of the Display). Select Yes for SNAP or No for FADE and accept by pressing the Encoder one more time. A YES in the respective cell will indicate that SNAP has been chosen for this channel.

The default for all DMX channels is to follow cue timing.

- *FADE*: A value can be changed slowly (channel can fade).

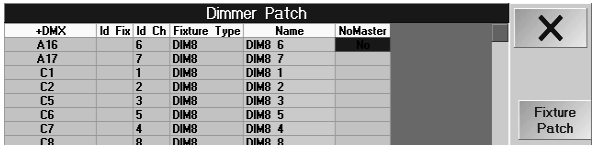
This is only a pre-setting for each individual channel and can easily be changed during programming, if needed.


Fixture Patch
+DMX Id Fix Id Ch Fixture Type Name NoMaster Pan Tilt Sw.
A1 1 Test Test 1
A20 2 MINISCAN HPE MINISCAN HPE 1 No
A27 3 MAC 2000 WASH 2 MAC 2000 WASH 21CH Yes Yes
A48 4 MAC 2000 PERFORI MAC 2000 PERFORM 3
Channel Patch

Fixture or Channel Patch menu

In both of these menus you can patch fixtures. And you can define standard settings for each fixtur

● press ***SETUP***
● press ***FULL ACCES***



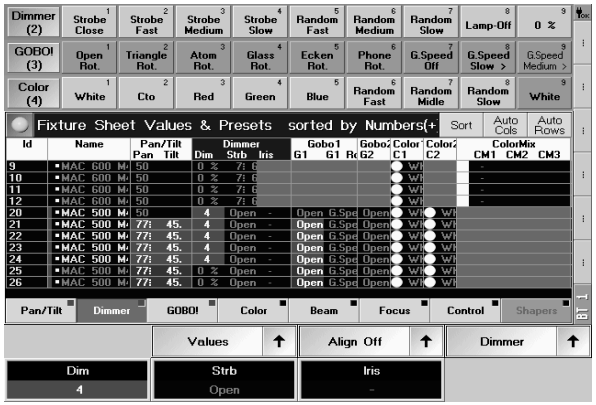
- press ***PATCH SHEET***
- press ***FIXTURE PATCH*** or ***CHANNEL PATCH***

Listing of individual functions

DMX: Shows the patched channel. If this is to be adjusted, click into the cell and rotate the Display Encoder. The Fixtures to Patch menu will open. **2.2.2** Patching Scanners/Dimmers

NoMaster: If a cell contains a No here, the function of the Grandmaster-Faders is not active for this fixture. **2.2.5** Switching the Master (GRANDMASTER FADER) off (one page earlier).

Pan/Tilt/Swap: If a cell contains a Yes here, the function will be inverted or completely exchanged. **2.2.5** Inverting or changing PAN or TILT.



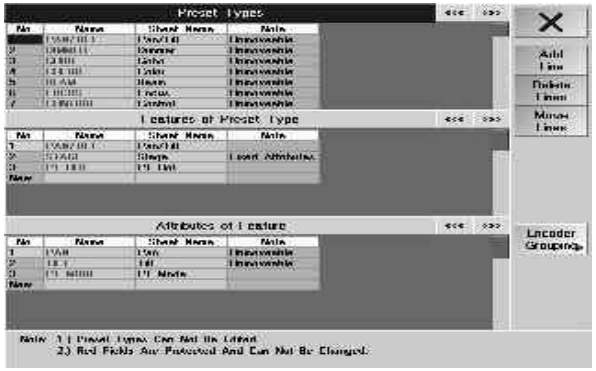
2.4 Adjustments in the ATTRIBUTE SETUP menu

In the „Attribute Setup" menu, you can change the names of Preset and Features Groups. Furthermore, you can create or adapt new Features Groups. Furthermore, you can define, which attributes will be activated together or individually.

But first a short explanation about the differences between Presets, Features and Attributes:

Attribute: Attributes are individual functions of Fixtures like Gobo1, Focus, Iris, Pan, Tilt ...
Feature: Features are groups, in which several Attributes are combined. In the Fixture Sheet, the first line will display all Features available. Below the individual Features, the respective Attributes are displayed.
Presets: In a preset, the value of one or more Attributes can be stored. Presets are divided in different Preset Groups (Gobo, Colour, ...).Features are allocated to the individual Preset Groups.

By pressing a FEATURE key with the function (in this case, Dimmer), you can select the different Feature Groups for the Preset Group selected to change the individual Attributes using the Encoder.
Here, the individual Attributes are displayed that can be changed with the respective Encoder.



2.4.1 Preset, Feature and Attribute Setup

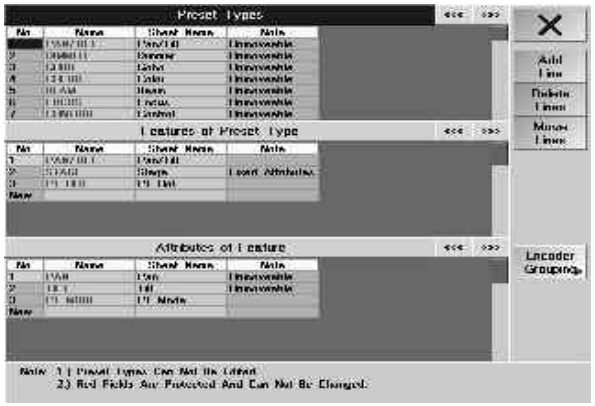
Attention! This menu is important and can influence all of your programming!

- press ***Full-*** or ***Live Access***
- open ***Attribute Setup***

The number of Preset groups is fix and cannot be modified. Furthermore, the names displayed in ***red*** can't either be changed or deleted.

Changing the names of Preset groups, Features and Attributes

Click on a name, change it using the keyboard, and confirm with Enter. The modifications will only be executed and saved after leaving the Full or Live Access menu and pressing the SAVE button.
The new name will now be displayed in the respective Preset window or in the Fixture window.



Creating an additional Feature in a Preset group

When creating new scanners or adjusting of present ones, you possibly need additional Features and Attributes.
Select a Preset group.
Click into the empty cell below the present Features. Enter a name for the new Feature using the keyboard (e.g.: Gobo 4) and confirm with Enter. The same name is automatically taken over and will be displayed in the Fixture window on the right side. If you want to use a different name, change it as indicated further above.
Now, you still have to create Attributes for this Feature.
Click into the first cell below the name. Enter a name using the keyboard (e.g.: Gobo 4) and confirm with Enter. The same name is automatically taken over and will be displayed in the Fixture window on the right side. If you want to use a different name, change it as indicated further above. To create further Attributes, go to the next free cell and proceed as you did for the first Attribute..

Adding additional Attributes to a Feature

- Select a Preset group and then an Feature.
- Click into the free cell below the available Attributes.
- Enter a name for the new Attribute using the keyboard (e.g.: Gobo 4) and confirm with Enter. The same name is automatically taken over and will be displayed in the Fixture window on the right side. If you want to use a different name, change it as indicated further above.

Inserting, deleting or moving Features or Attributes

- Select a Feature or Attribute (blue background). Pressing the buttons below will have the indicated results:
- Add Line will add a new Feature or Attribute in front of the selected one.
- Delete Line will delete the selected Feature or Attribute. Only self-created Features or Attributes can be deleted.
- Moves Lines will move the selected Feature or Attribute to another place in the table. The different ways to move Features or Attributes will be explained in the two following items.

Moving a Feature to another Preset group

- Click on a Feature, e.g.: Gobo1.
- Press the Moves Lines button, will be displayed in red.
- Select a Preset group, to which the Feature is to be moved.
- Select the position in the Features table by clicking on it. The Feature will now be displayed in this Preset group.

Some Features cannot be moved (e.g.: Color Mix). This is indicated by the words “Fixed Attributes“ in the table on the right of the respective Feature.

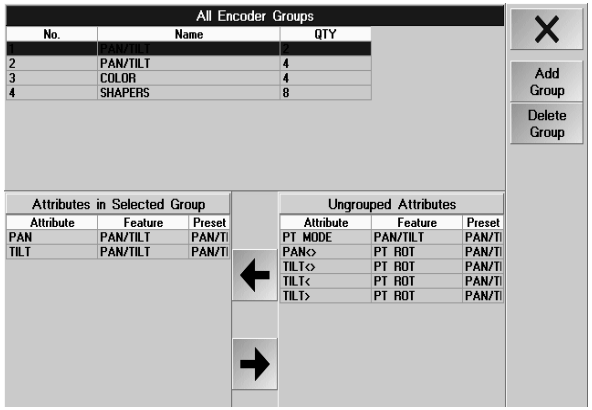
The changes will take effect and wiil be saved only after leaving the Full or Live Access menu and pressing the SAVE button.

Moving Attributes to another Feature or Preset group

- Click on an Attribute, e.g.: Shutter.
- Press the Moves Lines button, will be displayed in red.
- Select a Preset group, to which the Attribute is to be moved, e.g.: Control.
- Then, select a Feature, to which the Attribute is to be moved, e.g.: Control.
- Select the position in the Attributes table by clicking on it. In this Preset group, the Attribute will now be moved into this Feature

Some Attributes cannot be moved (e.g.: Color Mix1). This is indicated by the word “Unmoveable“ in the table on the right of the respective Attribute.

The changes will take effect and will be saved only after leaving the Full or Live Access menu and pressing the SAVE button.



2.4.2 Encoder (Activation) Grouping

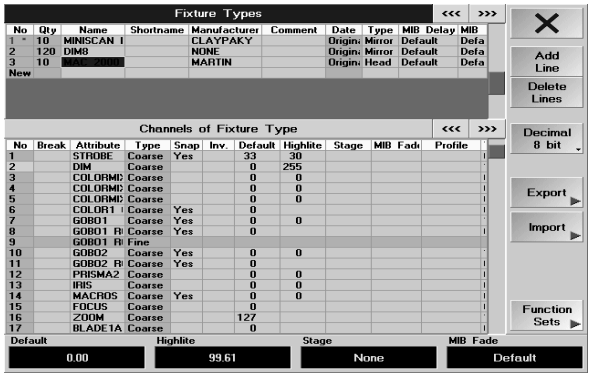
All settings within this menu will affect the storing of Cues, Presets and creating of Presets (Create Preset menu).

Attention! This menu is important and can influence all of your programming!

● Call up this menu by pressing the „Encoder (Attribute) Grouping” key in the Preset and Feature Assignment.
The Attributes combined in a group will be activated and stored when they are changed (e.g. Pan and Tilt).
In the Attribute Setup menu (see 2 pages earlier), open this menu by pressing the Encoder Grouping button.
By selecting a group, the appropriate Attributes will be displayed in the table on the lower left side.

- Pressing the „Add Group“ key will create a new group.
  In order to delete a group, this group has to be selected first. Now, press the „Delete Group“ key. The group will be deleted, the Attributes will automatically be added to the Free Attributes.
- In this column, the Attributes of the selected group will be displayed. By selecting an Attribute, this will be removedfrom this group and added to the Free Attributes.
- In order to assign Free Attributes to another group, this group has to be selected first. Selecting the Attribute will add it to the currently selected group.
- By pressing the „Default“ key, all groups except 3 will be deleted. Almost all Attributes will be displayed as Free Attributes in the right column. In the remaining 3 groups, the fixed Attributes (Pan/Tilt, Col.Mix1-4 and Blade1A-4B) are allocated. These Attributes can **not** be moved into other groups (indicated by “fix” next the Attribute’s name).

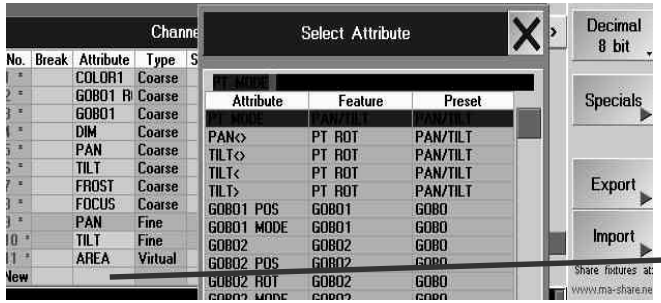
The changes will take effect and will be saved only after leaving the Full or Live Access menu and pressing the SAVE button.



2.5 Modifying Scanners (FIXTURE TYPES)

In the Full Access menu, open this menu by pressing the ***Fixture Types*** button.
The upper part of the Display shows all fixtures that are currently used in the Show.

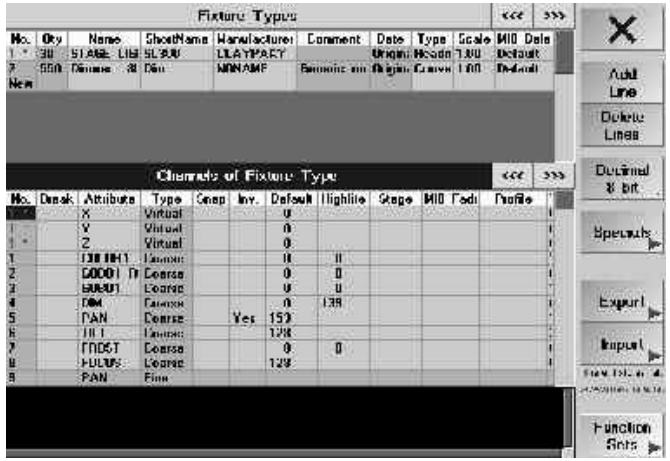
- ***No***: Numerical of the individual fixtures currently signed-on in this Show. If this number is displayed in red and with an asterisk, this fixture has been modified..
- ***Qty:*** Number of fixtures of this type.
- ***Name***: Name of the fixture from the Library. By selecting it, you can change the name directly using the keyboard.
- ***Shortname***: Here, you can enter an abbreviation or short name.



- ***Manufacturer***: Manufacturer's name from the Library.
- ***Comment***: Enter a comment here.
- ***Date***: If you see "Original" here, this fixture is one from the MA Library. If a self-created fixture is used, you'll find the date off creation here.
- ***Type***: Toggle between mirror or moving head Fixture. When using moving head Fixtures, the FIXTURE SHEET will show a square left of the PAN value, indicating the current head position..
- ***MIB Delay***: To set a DELAY time for the MOVE IN BLACK function for this fixture. If Default is displayed, the set value from the DEFAULT menu is used. **2.13** Settings in the DEFAULTS menu
- ***MIB Fade:*** To set a FADE time for the MOVE IN BLACK function for this fixture. If Default is displayed, the set value from the DEFAULT menu is used. **2.13** Settings in the DEFAULTS menu
- ***BeamAngle:*** Max. Beamwidth in degree (Zoom and Iris-function corresponds to this value).
- ***Power***: For the 3D view; see 3D instructions.
- ***Lumen***: For the 3D view; see 3D instructions..
- ***Weight***: For the 3D view; see 3D instructions.

If you select a fixture, the individual functions of this fixture will be displayed in the lower part of the Displays.

- ***No:*** Listing of the individual DMX channels. If a number is displayed in red and with an asterisk, this channel has been modified.
- ***Break***: If one cell contains a "Yes", you can assign a different DMX address from the next channel onwards. To change the setting, select a cell and press the Encoder. Now, select „Yes" and press the Encoder one more time.
- ***Attribut***: Listing of the individual functions. Press Encoder and choose function.
- ***Type***: „Coarse" stands for a coarse channel, and „Fine" for a fine channel.

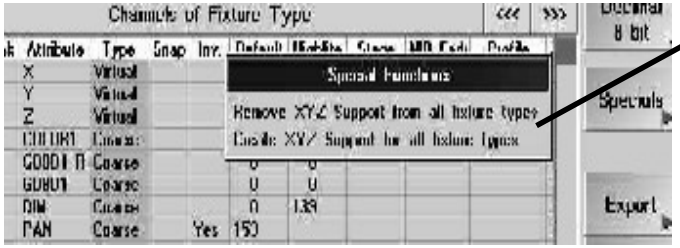


- ***Snap:*** FADE/SNAP function for the respective channel. **2.3** DMX List -Single Channel-specific Adjustments for the Current Show
- ***Inv:*** In this column, you can invert the respective channel.
- ***Default***: This value is called up, if the Fixture or Channel is not controlled by CUE, Sequence, Preset or a direct access. Can be changed with the left Encoder.n.
- ***Highlight***: This value is called up, if these fixtures are selected and the HIGHLIGHT key is pressed. Can be changed with the second Encoder.
- ***Stage***: (No function assigned yet).

- ***MIB Fade:*** Allows you to set a FADE time for the MOVE IN BLACK function for this Fixture. Can be changed with the right Encoder..
- ***Profile:*** In this column, you can assign a profile to the channel. **2.8** Creating, assigning and deleting Profiles
- ***Time:*** For the 3D view; see 3D instructions.
- ***React to Dimmer:*** depending to a virtual dimmer can be set

Functions of the individual buttons:

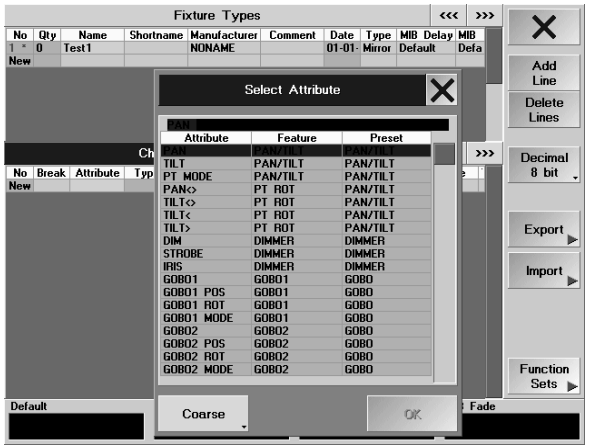
- ***Add Line:*** To insert a new fixture or function above the selected line.
- ***Delete Line:*** To delete the selected fixture or function.
- ***Decimal Values***: To display the table values as percentages. By pressing the button, you can switch between decimal and hexadecimal representation.



- ***Specials:*** Using CREATE, you can insert virtual X,Y, and Z axes into all Fixtures (necessary in order to use some of the STAGE features). Using REMOVE, you can remove the virtual axes - CAUTION, this will also remove all STAGE information contained in the current Show; sequences or effects containing these information, can then no longer be executed.

Updating the Fixtures Library
- ***Export to Library:*** The selected fixture will be saved to disk in the Library.
- ***Export to Floppy:*** The selected fixtures will be saved to floppy.
- ***Function Sets:*** Changes into this menu. **2.7** Function Sets
- ***Import:*** You can insert a fixture from the Library or from a floppy.
- ***Funcion Sets:*** Here, you can enter and modify value-depending names and values for the visualization and representation in the Fixture Sheet. Furthermore, you can define how Presets are automatically created **2.7** Function Sets - Names (Channel Values) and Presets

● With this, you can leave this menu. The settings will only take effect and be saved after leaving the Full Access menu and after pressing the SAVE button.



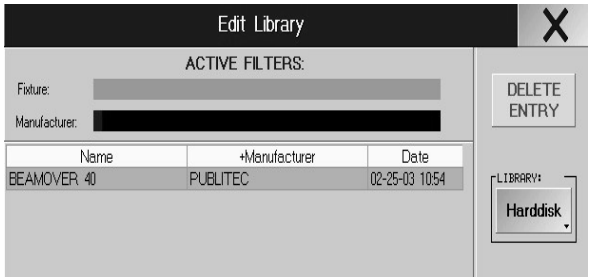
2.6 FIXTURES TYPES (create new)

In the Full Access menu, open this menu by pressing the Fixture Types button.

Make your entries or modifications as indicated. **1.9** General Operation.

All fixtures that are currently used in the Show will be displayed in the upper part of the Displays.
Description of all functions 2.5 FIXTURE TYPES, 2 pages earlier.
In the New column, click on the Name cell and enter a name for the new fixture and confirm with Enter. A new fixture is created and the basic settings are set to “Default“. These settings still have to be adjusted.

Please make sure that the chosen name does **not** already exist, because otherwise two with the same name can later only be recognised by their manufacturer or the date.



- Now, you can enter a name for Shortname, Manufacturer and, if needed, a comment.
- Type stands on Mirror and can be switched to Head by selecting the cell using the Encoders (to the right of the Display).
- Adjust the values for MIB Delay and MIB Fade, if needed.
- The settings for P Offset, T Offset, BeamAngle, Power, Lumen and Weight will only be needed for the visualization in the Stage window or on the ***grandMA*** 3D and can be adjusted, if need be.

In the New column, click on the Attribute cell and open the Select Attribute window by pressing on the Encoder (right to the Display).
Now, select the function for the first channel and accept it by pressing the Encoder one more time. Automatically, the next line will be selected.
The DUMMY Function is meant for fixed channels. The output value for this channel has to be set in the DEFAULT column. This channel can not be modified in the FIXTURE-SHEET.

If you finished selecting all Scanner functions, you can proceed with the presets.
Presets are:
- Type
- Snap
- Inv
- Default (can be adjusted with the left Encoder)
- Highlight (can be adjusted with the second Encoder)
- Stage (presently without any function)
- MIB FADE (can be adjusted with the right Encoder)
- Profil
- Speed

2.5 Listing of the individual functions in the EDIT FIXTURE menu
The values are displayed as percentages and can be switched to decimal or hexadecimal by pressing the Percent button.
For the individual functions (e.g. GOBO), so-called Channel Values can be created. These will then be displayed in the Fixture Sheet. You can switch to the menu by using the Function Sets button. **2.7** Function Sets.

● You can leave this menu by using the **X** button. You could now use the created fixture in this Show.

The settings will only take effect and be saved after leaving the Full Access menu and pressing the SAVE button.

Momentarily, the created fixture can only be used for this Show.

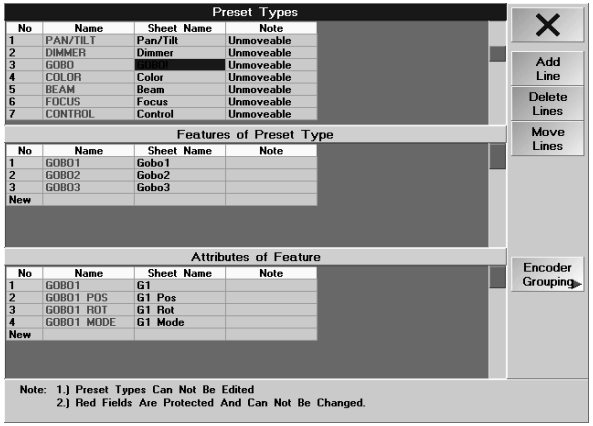
If you want to have this fixture available in the general Library (on harddisk or floppy), too, you have to UPDATE them (save to disk or floppy).
2.5 Updating the Scanner Library (USER-Library)

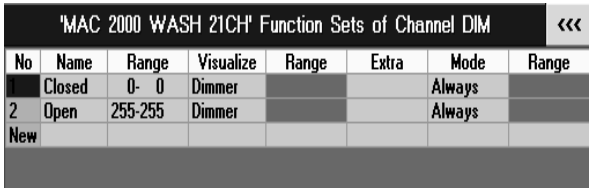
Delete self created fixtures
In the ***Tools***-menu you can delete (permanent) self created or varied fixtures from the library. You can not delete fixtures from factory desk library.

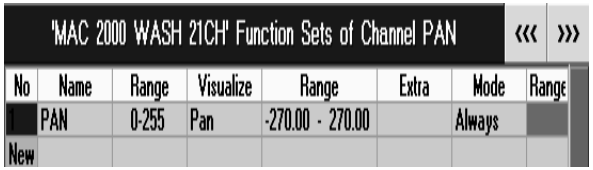
- In the menu ***Tools*** press the button ***Manage Fixture Library***
- Select the fixture and press ***Delete Entry***
- With the filters you can display fixtures of the desired manufacturer or names
- With ***Harddisk/Floppy*** choose store medium, mostly its ***Harddisk.***

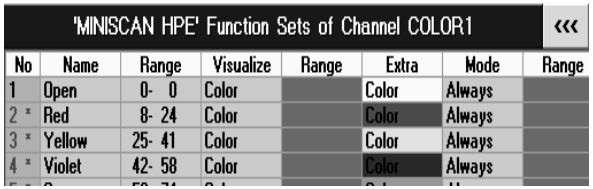
2.7 Function Sets - Names (Channel Values) and Presets

In this menu, you can create or adjust so-called Channel Values (names) for the individual functions (e.g. GOBO). These names will then be displayed in the Fixture Sheet instead of the number value. Furthermore, you can assign




'MAC 2000 WASH 21CH' Function Sets of Channel DIM
No Name Range Visualize Range Extra Mode Range
Closed 0- 0 Dimmer Always
2 Open 255-255 Dimmer Always
New


'MAC 2000 WASH 21CH' Function Sets of Channel PAN
No Name Range Visualize Range Extra Mode Range
PAN 0-255 Pan -270.00 - 270.00 Always
New


'MINISCAN HPE' Function Sets of Channel COLOR1
No Name Range Visualize Range Extra Mode Range
1 Open 0- 0 Color Color Always
2 Red 8- 24 Color Color Always
3 Yellow 25- 41 Color Color Always
4 Violet 42- 58 Color Color Always

different graphic parameters like e.g. colors or Gobos that will then additionally be displayed in the Fixture Sheet. These data will also be needed for the visualization on the ***grandMA*** 3D

These names and values are used when creating Presets in the Auto Create menu (**2.11** Auto Create - Creating Presets, Effects and Group buttons automatically).
Presets will **not** be created automatically, if for the Ranges of Names **and** Visualize values from "X" up to "Y" are indicated (e.g.: 10-21)***!*** Otherwise, always - see column AutoGen.

● Open this menu by pressing the Function Sets button in the Fixture Types menu (see 2 pages earlier).

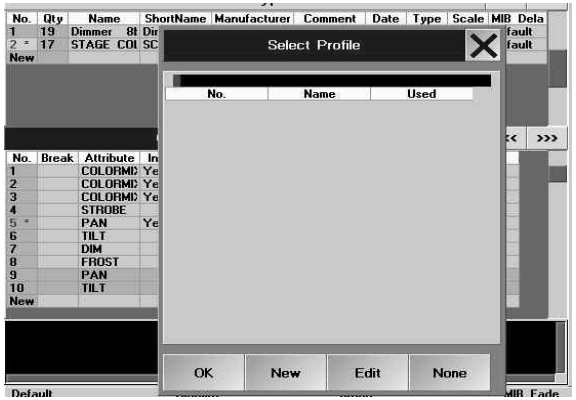
Listing of the individual columns and their functions

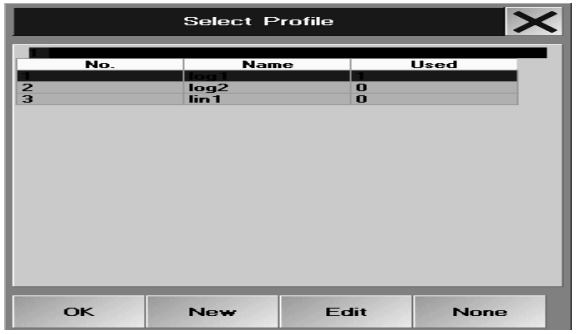
- ***No:*** Listing of the created names and appropriate values. If a number is displayed in red and with an asterisk, this line has been modified.
- ***Name:*** This name will only be displayed, if the value indicated for Range is reached. There are exceptions that will be explained on the next page. You can select individual names using the left Encoder.
- ***Range (Name):*** For these values, the names (Channel Values) will be displayed. The Start and End Ranges can be adjusted using the two Encoders in the middle.
- ***AutoGen:*** By choosing a cell and pressing the Encoder „No" will be indicated, this means, that the presets will be not automatically generated.
- ***Visualize:*** Here, you can define what else is to be displayed in the Fixture, Stage-Sheet or ***grandMA*** 3D. You can visualise either graphics (for Gobos) and colors or data plus units (e.g.: degrees for PAN/TILT or RPM for Gobo rotation).
- ***Range (Visu.):*** These values will be displayed to indicate units (e.g.: with PAN/TILT degrees); e.g. Gobo rotation: for a value of 1 - 20, 1 RPM -20 RPM will be displayed (Discrete values).
  For the functions PAN and TILT the maximal deflection is here setted; important for Flip functions and ***grandMA*** 3D views. E.g.: Pan -90 - 270 corresponds a maximal deflection of 360 degrees whereas the middle is at 0 degrees (asymetric deflection). For Zoom and Iris the value-range between 0 and 1.
- ***Extra:*** With this, you can define, what Gobos or colors will be displayed.
- ***Mode:*** Here, you can set an additional condition for displaying the name.
  With "Always", you do not set a condition, and the name will always be displayed.
  If, however, a function (Attribute) is selected and a Range set, this name will only be displayed, if the value (of the Range) of this function has been set (condition).
- ***Range (Mode):*** Value for the indicated function (mode).

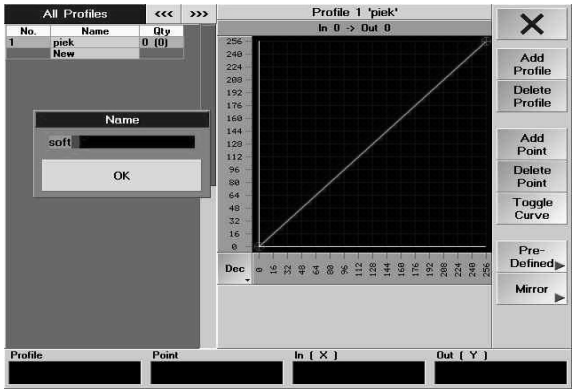
Functions of the individual buttons:

By pressing the button
- ***Add Line:*** you can insert a new name above the selected line.
- ***Delete Line:*** you can delete the selected name, i.e. the complete line.
- ***Percent Values:*** you can display the table values as percentages. By pressing the button, you can switch to decimal or hexadecimal display.

● to leave this menu. The settings will only take effect and be saved after leaving the Full Access menu and pressing the SAVE button.







Entering Names and Values

The Attribute, for which names and values can be entered, is displayed in the title bar **or** above the right Encoder below the Display. To select another one, rotate the Encoder, until the desired Attribute is displayed.
The first column contains the name (for Color e.g.: Color1). Click on this name and change it, if needed (e.g.: Close, Red, ...).
In the Range column, 0.00% - 100.00% is displayed. Using the second and third Encoder, you can enter the starting and end values for this name (Channel Values). By pressing the Percent Values buttons, you can switch to decimal or hexadecimal display.
For further names and values, repeat these two steps, using the next lines, respectively.

Examples:

Here are some examples for standard functions (e.g.: Dimmer, ...), variable functions (e.g.: Strobe, Pan, Rotation, ...) and functions with fix values (Gobo, Colors, ...). You can sign-on different fixtures for a trial, of course, or have a look at the given names and settings and use them for your own fixtures.

- ***Standard function:*** Closed will be displayed, if the set value is „0“. Open, if on 255. Between 1- and 254, only the value will be displayed.
- ***Variable function: (Discrete Values)*** The set value will be displayed. Furthermore, a value indication will bedisplayed together with „Degrees“ as unit. In this case, -270° to 270° would be displayed. For Strobe, “Hz“ and for Gobo_Rotate “RPM“ would appear here.
- ***Fixed values:*** Open will be displayed, if the set value is „0“.
  Red between „8“ and „24“ and additionally a color will be displayed on the side. This color can be set in the Extra column. Sames applies for the other colors.
  Between the given values (e.g.: here 1 - 7), the color would be displaced by Open, and the color be inserted for Red. Only after reaching the value “8“ would the color be displayed completely for Red.

2.8 Creating, Assigning and Deleting Profiles (see also: TTOLS-Menu)*

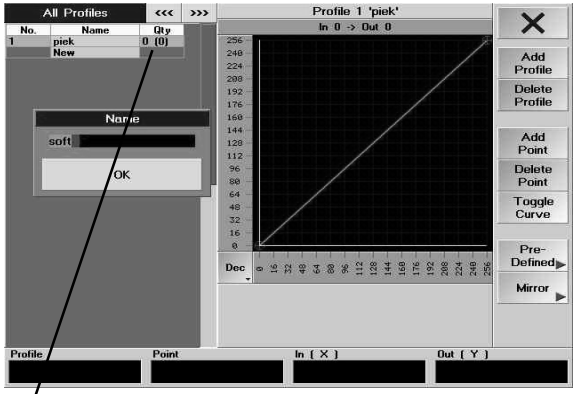
In the PROFILE TOOL menu, you can create individual profiles. The profiles created can be assigned to any Fixture parameter or dimmer channel.

Assigning a profile to a DMX channel

- press ***Setup***
- Open the FIXTURE TYPES menu **2.5** Modifying scanners (EDIT FIXTURE) or **2.6** Creating Scanners (EDIT FIXTURE). Here, you can assign a profile to **all** fixtures of one type **simultaneously**.

Or:

Open the Patch Sheets menu **2.3** DMX List -Single Channel-specific Adjustments for the Current Show. Here, you can assign a profile to each individual DMX channel.
In the Profile column, elect the cell for the fixture or DMX channel, and press the Encoder. The Select Profile menu



Qty: Numbers of cordinations are displayed
100 : Number of fixtures, this profile is coordinated.
(1): Number of channels per fixture, this profile is coordinated.t

will open.
The table shows all created profiles.
By selecting a profile, it will be activated and the menu be closed. The name of the selected profile will now be displayed in the cell.

Un-assigning a Profile

Select the name of the assigned profile and press the **None** button. This will revoke the assignment.

2.8.1EDIT PROFILES - Creating or modifying profiles

If you want to create a new profile, press the **NEW** button. The EDIT PROFILES menu will open. Additionally, a window will open, where you can enter a name for the profile and have to confirm it with Enter.
To change a profile, select it using the Encoder and press the **Edit** button. The EDIT PROFILES menu will open with the selected profile.

At first, when creating a new profile, a lineary profile is displayed that can then be modified. If an existing profile is selected, this will now be displayed.
The y-axis gives the value set on the ***grandMA***, whereas the x-axis gives the DMX value that will be output. By pressing the PERCENT key, you can switch the scaling from percent to decimal or, when pressing the key once more, to hexadecimal.

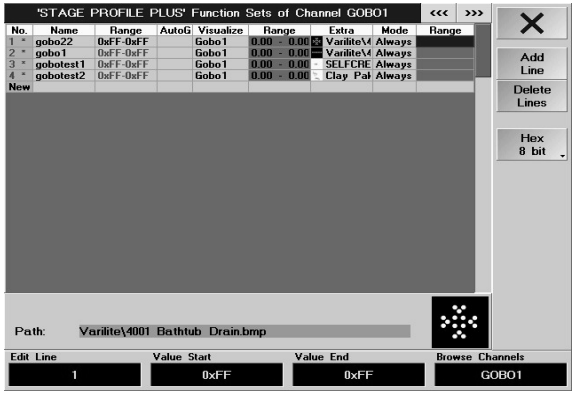
● Clicking on a desired point in the diagram will bring up cross-wires. Above the diagram, the value of the current position is displayed. The value after IN is the set value on the ***grandMA***, the one after OUT is the DMX value that will be put out.

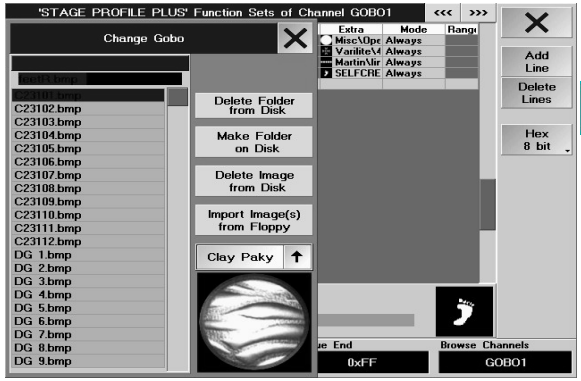
- ***Add Point:*** The profile line will automatically be connected with the new point.
  This way, you can set as many points as you wish.
- ***Delete Point:*** To **delete** a point, select one and press the **Delete Point** button.
- ***Toggle Curve:*** will create a wave form.
- ***PREDEFINED:*** opens a menue with predefined profiles, these profiles can altered and stored with a new name.
- ***MIRROR:*** displays a selection to mirror the profile.

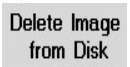
● Using the **mouse**, you can move points. Make a left mouse click on the point, draw it to the desired position and let the button go.

The modifications made will be saved to this profile directly.
The table will show all existing profiles that can also be accessed and modified directly.
To create an additional profile, press the **Add Profile** button, name it and repeat the steps above.
To delete a profile in the table, select it and press the **Delete Profile** button. Deleting a profile is only possible when the profile is already deleted from the fixture (in ***Full Access*** / ***Fixture Types*** / ***Profiles***)

● Pressing the **X** button will save the profiles and you leave the menu.







2.8.2 Embedding self-created Gobos2.8.2 Embedding self-created Gobos

When using self-created Gobos, these graphics can be collected in a Gobo library; the Visualizer will, however, show the „real“ Gobos. In stage view on the console, the light is indicated in a very simplified form, i.e. as a color line, and the Gobos do not appear.

Saving a self-created Bitmap graphics

- create a graphics and save it as a BMP file to a floppy
- FULL ACCESS
- FIXTURE TYPES
- activate the FIXTURETYPE menu (dark blue title bar) and the line of the fixture type
- activate the CHANNELS of FIXTURETYPE menu (dark blue title bar)
- use the Encoder to jump to the attribute cell GOBO
- FUNCTION SETS the FUNCTION SETS menu of the respective fixture type (Gobo 1 or Gobo 2) will appear
- in the empty bottom line, enter a name for the Gobo – the line will be numbered automatically
- enter a range (environment in which the Gobo should completely be visible – depends on the fixture type)
- Visualize – using the Encoder, choose the Visulize Effect fro the menu (in this case, Gobo 1 or Gobo 2)
- position the frame in the EXTRA column using the Encoder – the CHANGE GOBO menu will appear
- use the arrow to open the folder overview
- use the Encoder to choose and open the folder in which you want to save the bitmap
- copy the bitmap into the folder by using IMPORT IMAGE FROM DISK

or:

- create a new folder using MAKE FOLDER ON DISK; enter a name and confirm
- copy the bitmap into the folder by using IMPORT IMAGE FROM DISK

„Inserting“ an already saved Gobo in a fixture

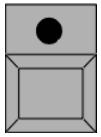
When Gobos were exchanged within a fixture, you have to do the same for the „equipment“ in the library so that the 3D Visualizer can give a real representation of the Show.

- open the FUNCTION SETS menu of the respective fixture type (Gobo 1 or Gobo 2) – see above
- use the Encoder to go to the EXTRA cell and open the CHANGE GOBO menu
- use the arrow to open the menus of different manufacturers
- choose a manufacturer and a Gobo, and confirm using the Encoder – the chosen Gobo will be „inserted“ into the fixture

- using DELETE FOLDER FROM DISK to delete the chosen folder from the hard disk
- using DELETE IMAGE FROM DISK to delete the bitmap from the chosen folder

The bitmaps and folders for those bitmaps will be permanently deleted can not be „oopsed“ again

TOOLS



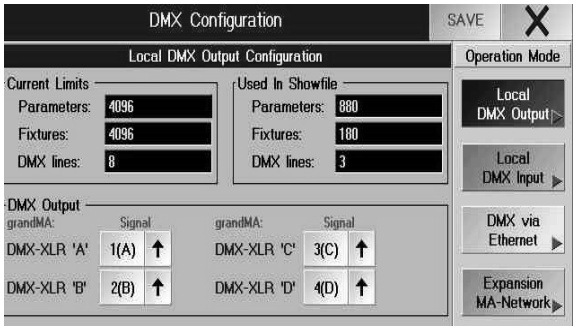
2.9 DMX Output and Ethernet Configuration

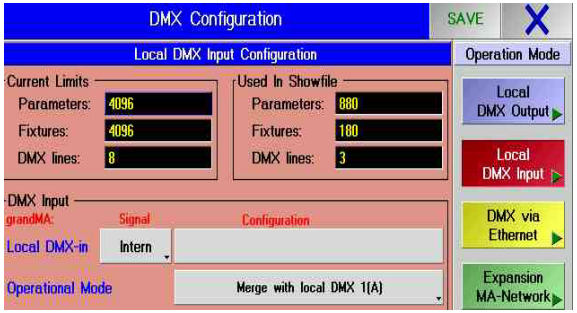
There are 4 DMX output sockets on the rear of the ***grandMA***. These sockets can be assigned to any of the DMX universes A to H. It is also possible to output the same universe on more than one output socket.
By using Ethernet data transmission more DMX outputs can be assigned.

DMX universes E to H are only available with the optional channel expansion upgrade to 4096 channels. As of serial number 156, a dongle (hardware protection) has to be installed within the ***grandMA***; for serial numbers under SN 156, a plug-in card has to be exchanged.

For this operation, the unit can only be opened by a qualified technician. CAUTION: disconnect the mains power first!

There are some limitations for the MICRO and ***grandMA*** UltraLight





2.9.1 Assigning the DMX-XLR sockets of the *grandMA*

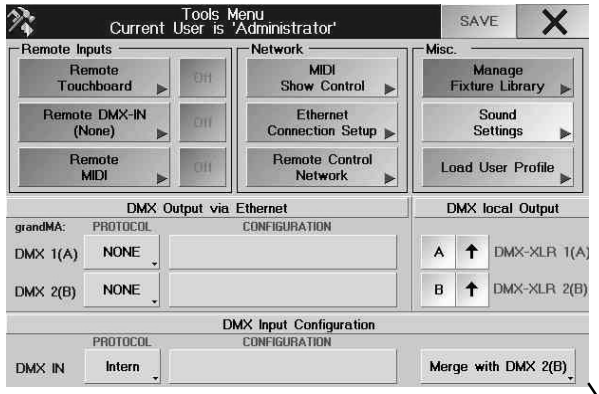
DMX outputs A to D ***(on the backside of the console)***
In this column, the DMX ports can be assigned to the respective output sockets on the ***grandMA***.
By repeated pressing these keys any of the DMX Universes, A to H, can be assigned to any of the ***grandMA***´s DMX output sockets A to D. The assigning of DMX ports to the sockets is instantaneous.

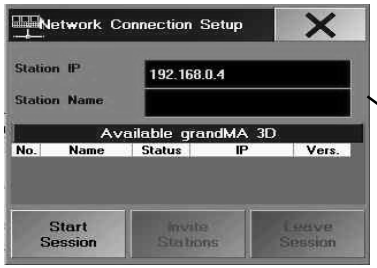
DMX input

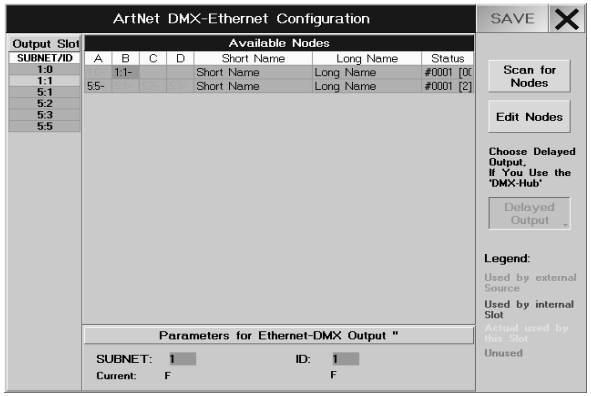
In this area, you can assign the DMX-XLR input to an internal DMX port (A-H), or you can assign the DMX-In of an external Ethernet DMX unit to an internal DMX port.
By pressing the button below PROTOCOL, you can set the following:
- ***Intern:*** The DMX-IN (on the backside of the console) will be used.
- ***ARTNET:*** The assigned DMX-In of an ARTNET unit will be used. Assignment see **2.9.3** ARTNET DMX- ETHERNET CONFIGURATION,DMX input
In this area, you can assign the DMX-XLR input to an internal DMX port (A-H), or you can assign the DMX-In of an external Ethernet DMX unit to an internal DMX port.
By pressing the button below PROTOCOL, you can set the following:
- ***Intern:*** The DMX-IN (on the backside of the console) will be used.
- ***ARTNET:*** The assigned DMX-In of an ARTNET unit will be used. Assignment see ***2.9.3*** ARTNET DMX-ETHERNET CONFIGURATION
-PORTALL: Not verified in this software version.
- ***PATH PORT:*** The assigned DMX-In of a PATH PORT unit will be used. Assignment see ***2.9.4*** PATH POT DMX-ETHERNET CONFIGURATION, next pages.
By pressing the button below Configuration, you can open the appropriate menu. below or on the next page

DMX Merge

By pressing the “Merge with“ button you can define, on which internal DMX port (A to H) the DMX-IN signal will bemerged with.







DMX IN can be used to merge the signals of a second console with those of the ***grandMAs*** (MERGE) and pipe them to the stage on the same line. If channels from the ***grandMA*** and of the second console are triggered in this connection, the higher value will be sent (HTP).
The DMX-In can be used as an additional remote control channel **8.3** Remote control by DMX IN
Attention: If you are in a network connection of Master-Slave, only the DMX IN of the Master console will be transferred to the internal DMX port. The DMX IN of the Slave console can only be used for remote control purposes.

2.9.2 Configuring the internal DMX ports 1(A) - 8(H)

By pressing a button in the PROTOCOL column, you can set a protocol for the appropriate DMX port (A-H) (referred to the respective Ethernet DMX converter) for the transmissions.
By pressing a button in the CONFIGURATION column, you can call up the appropriate menu for this DMX output.
next pages
If the button is on "**enabled if Idle or Playback**", a DMX output via Ethernet is on, if the unit is not in a session (Idle). An exception is here the Playback Session, in this case the Slave stays on.
In a Master-Slave configuration (Full-Tracking and Multi-User Session), the Slaves switch itselv to „Disable" (off). If a Master fails, the Slave with the higher priority will automatically be switched to „Enable". This way, the DMX will now be created by the former Slave (now Master). If two units are switched to „Enable", the data may will overlap. This has to be avoided under all cicrumstances!
By pressing on this button, it will switch to "disabled"; now, a DMX output via Ethernet is no longer possible.
next pages

2.9.3 DMX-CONFIGURATION at Micro

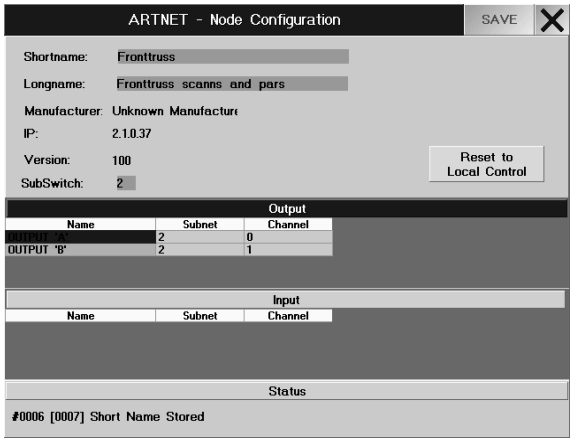
Open this menu with TOOLS. It is a compressed versionof the TOOLS-menus of the „big" ***grandMAs***.

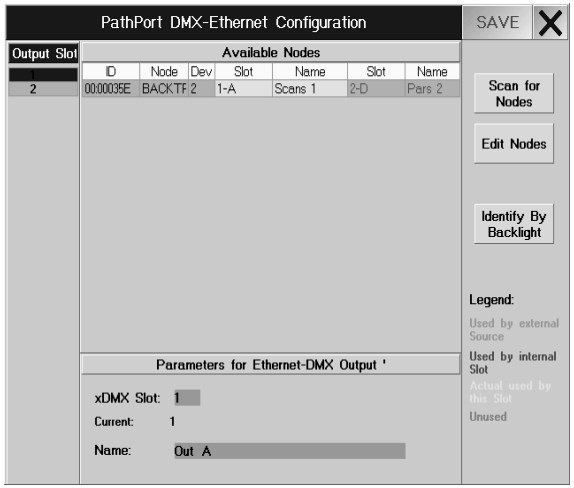
With the menu „Ethernet Configuration Setup" you can change the IP-address and the name of the desk. With START SESSION the Micro connects with ***grandMA 3D*** .
The Micro can not be connected to NSPs and other grandMAs.

2.9.4 ARTNET DMX-ETHERNET-CONFIGURATION

You can call up this menu by pressing a button in the CONFIGURATION column, if the PathPort protocol has been selected

It is possible to connect up to 16 Ethernet DMX Converter. On the DMX converters, unique SUB NET addresses have to be designated accordingly. The address switches of the individual DMX sockets have to be set to four different addresses. The settings modified on the DMX converter, can be overwritten by software. Artnet - Note Configuration, next page
If Artnet converters are connected, they will be searched for and displayed in the chart when calling up this menu. If the converter is being activated after opening the menu, you can search for the converter by pressing





the **Scan for Nodes** key to insert the converter in the chart, if one is found.
In the left chart, all converters found will be displayed with the respectively set address for each DMX OUTPUT. The number in front of the colon is the SUBNET address, the number following is the address for the DMX OUTPUT.
Choose an address for the DMX OUTPUT.
In the right chart, one line is displayed for each converter. The selected DMX OUTPUT will be displayed on a green background.
If an output is displayed on a red background, this indicates that it is already being assigned and can not be used.
Pressing the **Save** button will save all modifications.
Press the key X. Now, the converter for this DMX port is configured and the menu will be closed.
For the „DMX Hub“ from the Artistic Licence Company, this button must be on „Delayed Output“, for all other units, this setting is not relevant.
If further ports are to be assigned, repeat all steps. When all settings are completed, press the SAVE key in the DMX-OUTPUT CONFIGURATION menu. The modified settings are now stored. Now, the blue ACTIVE LED at the assigned DMX converter is on and the DMX outputs can be used. When at the node data is received, the red LED is on.

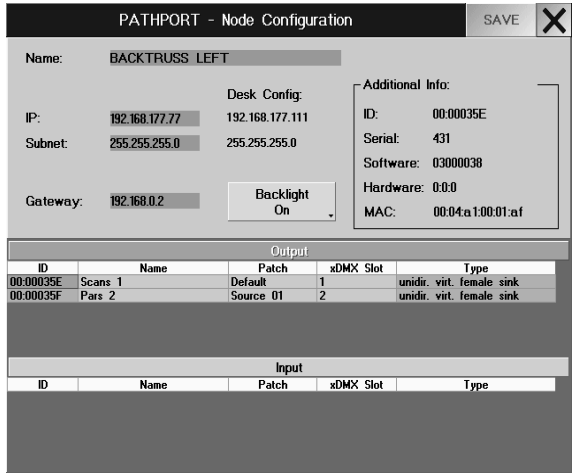
Artnet - Node Configuration:

First, choose a DMX converter to be edited in the table.
Pressing the **Edit Nodes** button for this Ethernet-DMX converter will open the menu.
As Shortname and Longname, you can enter any name for this converter.
The IP address of the ***grandMAs does not have to be*** adapted to this IP address here.
For Manufacturer, IP and version, only internal data from the converter will be displayed.
For SubSwitch, the DMX converter SubNet number can be changed. This change will overwrite the settings in the converter.
In the **Output** table, the available DMX outputs of the Ethernet-DMX converters will be displayed.
In the **Input** table, the available DMX inputs of the Ethernet-DMX converters will be displayed (DMX input two pages earlier).
In the tables, you can adjust the SubNet and Channel addresses for every DMX output or input. This change will overwrite the settings in the Ethernet-DMX converter.
By pressing the **Reset to Local Control** button, the Ethernet-DMX converter will be reset to its standard setting (Defaults).
Pressing the **Save** button will save the modifications.
By pressing the **X** button, you will leave this menu.

2.9.5 PathPort DMX-ETHERNET-CONFIGURATION

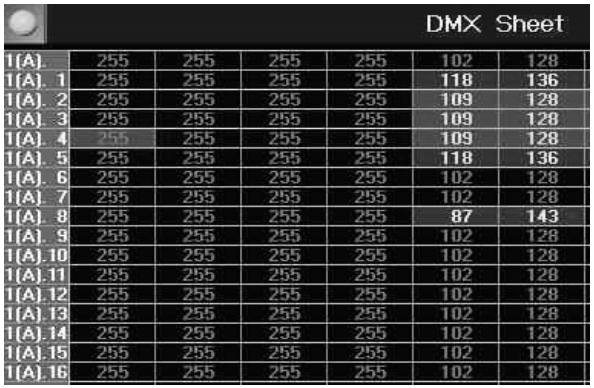
You can call up this menu by pressing a button in the CONFIGURATION column, if the PathPort protocol has been selected.

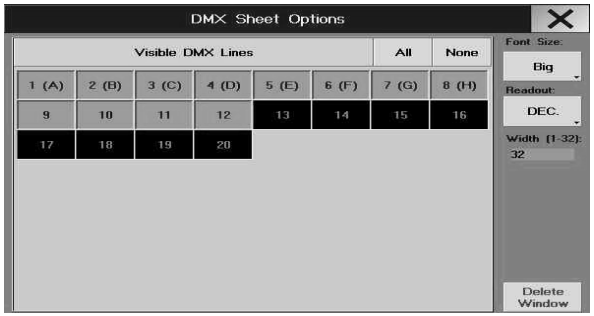
Up to 64 DMX outputs can be triggered via the PathPort nodes. The IP address has to be adapted to the PathPorts Ethernet-DMX converter, something you can also do via the ***grandMA***. PATHPORT - Node Configuration, next page
If PathPort Ethernet-DMX converter s are connected, they will be looked for when you call up this menu, and they are displayed in the table (only, if the first 3 digits of the IP address of ***grandMA*** and PathPort Ethernet-DMX

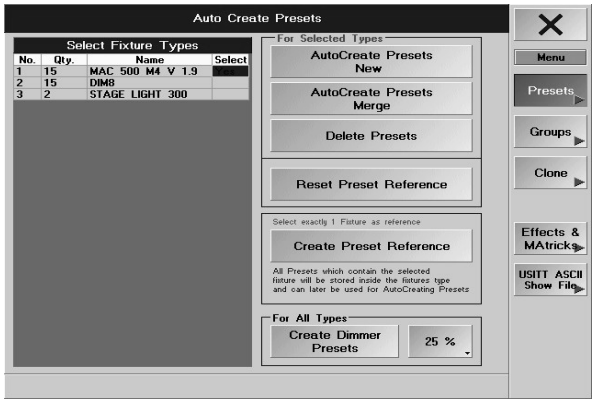


converter are identical, e.g.: 192.168.0.**x**).
If the Node is activated after having opened the menu, you can look for the Node by pressing the **Scan for Nodes** button to be displayed in the table.
In the left table, all found DMX outputs are indicated by a number. These are the assigned xDMX slots (PATHPORT - Node Configuration, next page). The outputs can be distinguished by these numbers.
Select an address for the DMX output.
In the right table, one line is displayed for each Node. The selected DMX output will be indicated by a green background.
If an output is indicated by a red background, this means that it is already assigned and cannot be used.
If you press the **Identify by Backlight** button, the background lighting of the Display will blink.
Pressing the **Save** button will save the changes.
Press the **X** button. Now, the converter for this DMX port is configured and the menu will be closed.
If additional ports are to be assigned, repeat all steps as indicated. After all settings have been made, press the SAVE button in the DMX-OUTPUT CONFIGURATION menu. The changes made will be saved then. On the assigned Ethernet-DMX converter, **Active** will be displayed for the assigned DMX outputs and inputs.

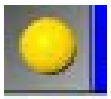
PATHPORT - Node Configuration:
First, choose a DMX converter to be adjusted in the table.
By pressing the **Edit Nodes** button, open the menu for this DMX converter.
The data will be read from the Ethernet-DMX converter and be displayed.
Aside from the name, a deliberate name for this node can be chosen.
IP: here, you can set the IP address. When pressing the **Save** button, you have to start the Ethernet-DMX converter transmission by pressing **OK** in the opened window. The converter will reboot and set the new IP address.
Under Desk Config, the IP address and the Subnet of the console will be displayed.
If the SubNet is not identical, this has to be adjusted. For further information, please contact you network administrator.
Gateway: For further information, please contact you network administrator.
With the Backlight button, you can switch the background lighting on and off.
In the **Output** table, all available DMX outputs of the DMX converter are displayed.
In the **Input** table, all available DMX inputs of the DMX converter are displayed (DMX input four pages earlier).
In the tables, you can adjust the name, patch for every DMX output or input.
In the xDMX column, you can assign a number for every DMX output or input. Each DMX output or input will be assigned by this number.
If you press the **Save** button, the changes are transferred to the converter.
By pressing the **X** button, you close the menu







2.10 DMX Output Window



Create a DMX Output Window (DMX) using a TFT Display. **3.1** Creating windows

- Open ***Options Menu***

In this window, each patched channel can be displayed showing the value it is currently outputing.
By briefly pressing the respective keys (A – H) (dark background), all DMX ports' DMX channels will be displayed in this window (if needed, scroll through the window using the Encoder next to the Display.)

The first DMX channel of this row is displayed here.
If you position the mouse pointer on a cell, the DMX channel (possibly already patched channels with their fixture types and functions) will be displayed in the lower part of the window.

In the DMX-sheet you can also change the DMX-Patch:

- ***Cchange patch:***

Press button ***Move*** (LED lights) and click on a channel with left mouse button, hold left mouse button down and move the fixture to an empty space. You can only move the complete fixture, therefore you need enough space (in a continuous row) at the new address.

- ***Unpatch:***

Press button ***Delete*** (LED lights) and select a channel (with mouse or touch). All channels of the fixture will be deleted.

- ***New Patch of Fixtures:***

Fixtures, which are present in the fixture-Sheet, can directly patched in the DMX-Sheet
- select fixture in fixture sheet (with mous or touch)
- press button ***Assign*** (LED lits)
- press empty space in the DMX-sheet, the fixture will be patched (if the fixture needs more channels as available in this area, the procedure will be stopped. Look for an area with enough empty channels in a row.

Note: when you take action in the DMX-sheet and ***Full Access*** is aktive, dont press ***Save*** after closing ***Full Access*** - otherwise all changes in the DMX-shet will be rejected.

2.11 Auto Create - Creating presets, effects and group keys automatically

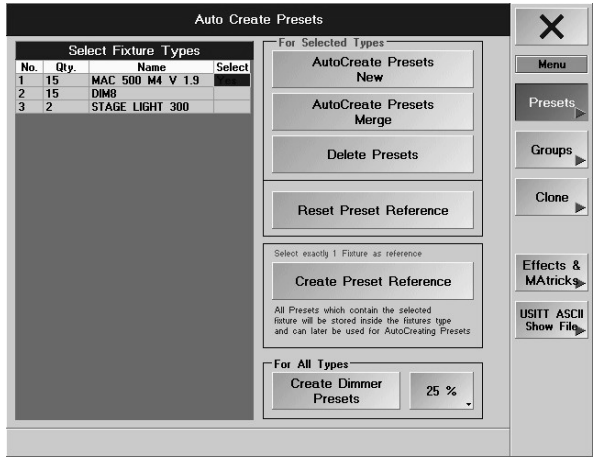
For most of the Fixtures in the library, there are ready-made presets that can be created in this window. Furthermore, ready-made effects and group keys for each Fixture and Dimmer can be also be created.

- open ***AUTO CREATE*** in ***SETUP-Menu***

2.11.1 Creating Presets automatically

- Call up AUTO CREATE in the SETUP menu.

In the table, all Scanner and Dimmer types are displayed that are used in the current Show. On the right of each Scanner and Dimmer, you'll find the Select column. By choosing a cell and pressing the Encoder on the right of the Display, you can select them and the display switches to Yes. When creating Presets, these will only be



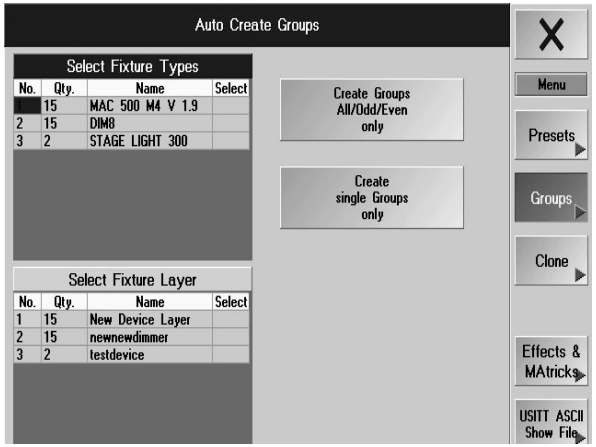
created for these Scanners or Dimmers.
By pressing the ***Autocreate Prests New*** button, you can create **individual** Presets for **each** Scanner type. The created Presets will now be available in the individual PRESET windows. See also: **2.7.** Function Sets - Names (Channel Values) and Presets
By pressing the ***Autocreate Presets Merge*** button, you can create the Presets for all Scanner types simultaneously. Same names of different Scanners will be displayed on **one** PRESET button.
By pressing the ***Delete Presets*** button, you can delete the Presets of the selected Scanners and Dimmers.
By pressing the button ***Reset Presets References*** you can delete all self created preset references and the presets created from the function sets from library.
To save self-created Presets of a Reference Scanner, select the appropriate Scanner (in the Fixture Sheet). Press the "Create Preset Preference" button. The Presets will now be saved to the Fixture in the USER Library in this Show (same name, can only be distinguished by its version number). If you sign-on further Fixtures of this type (same version), you can load the created Presets with CREATE NEW PRESETS (see item **3**). To use this Fixture with the self-created Presets in other Shows or on other consoles, too, you have to save this Fixture in the USER Library on disk or floppy. **2.5** Updating the Fixture Library (USER Library)
By pressing the "Create Dimmer Presets" button, you can creatPresets in differently adjustable levels for each Dimmer channel. The Presets can bei adjusted in 4 levels (5, 10, 20, or 25%) by pressing the button on the right.

2.11.2 Creating groups automatically

● If the Groups button is pressed (green background), you are in the Auto Create Groups menu.
In the upper table, all Scanner and Dimmers are displayed that are used in the current Show.
In the lower table, all "Fixture Layer" are displayed that are used in the current Show.
On the right of each Scanner and Dimmer, you'll find the Select column. By choosing a cell and pressing the Encoder on the right of the Display, these are selected and the display switches to Yes. When creating groups, groups will be created only for these Scanners or Dimmers.
By pressing the CREATE GROUPS button, one ODD button will be created for each Scanner type, with which you can select all odd-numbered Scanners simultaneously. One EVEN button to select all even-numbered Scanners, and an ALL button, to select all of the two.
By pressing the CREATE SINGLE GROUPS button, you can create a single button for each Scanner type in the GROUP window.

2.11.3 Clone Fixture - Copying Fixture data globally (cloning)

● Press ***Clone*** button (green background) to open the Clone Fixture Data menu.
You can clone (copy) ***all*** data of one or more fixtures globally. In this, all Preset, Group, Cue and Effect data are cloned from the first fixture/s (From Fixtures...) to the target fixture/s (...To Fixtures). If you select the same number of fixtures on each side, the data of the first will be transferred to the first, of the second to the second, etc.
Select the fixture/s that you want to clone (Fixture Sheet). If you want to clone several fixtures, you have to observe the sequence in which you select them. Pressing the left Take Selection button will display the fixtures in the left table (From Fixtures...).



Select the fixture/s, to which you want to clone the data (Fixture Sheet). If you want to clone several fixtures, you have to observe the sequence in which you select them. Pressing the left Take Selection button will display the fixtures in the right table (... To Fixtures).
By pressing the >>>! Clone!<<< button, you can clone all data.

Attention: All target fixture data created sofar will be overwritten/deleted.

2.11.4 Auto Create Effects

● Press ***Auto Create Effects*** button (green background) to open the Auto Create Effects menu.
By pressing the **Create Built-in Dafault Effects** menu, you can create preset effects that will then be available in the EFFECT pool. **6** Effects
By pressing the **Import Effects** button, you can load saved effects from floppy.
By pressing the **Export Effects** button, you can save the created effects to a floppy.

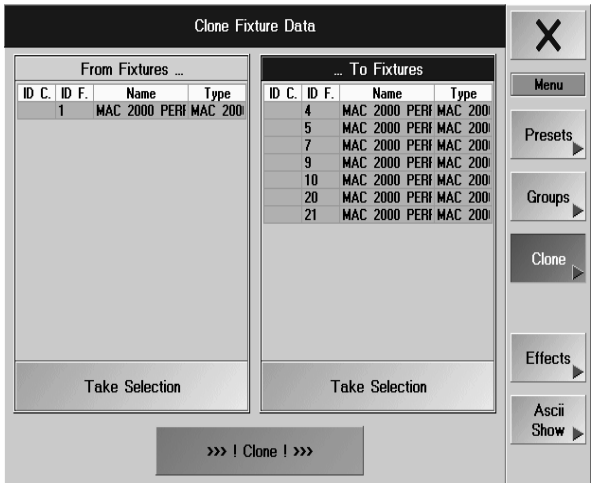
2.11.5 ASCII Show Import

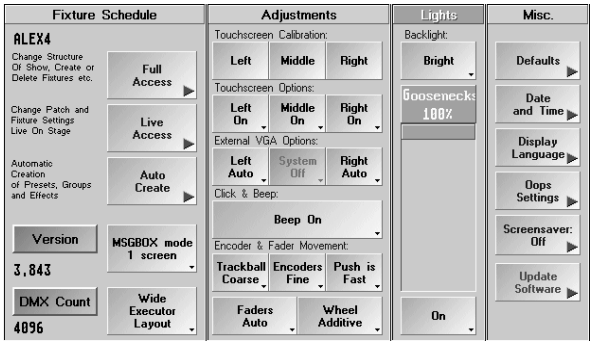
If the Ascii Show button is pressed (green background), you are in the ASCII Show Import menu.
Before you load an ASCII Show, you should save the Current Show, as it could be overwritten.
If the FDD contains a floppy with a Show in ASCII format (file with the .ALQ extension), you can load the Show by pressing the button. It is not possible to transfer Scanner data. The Default User Settings (**2.8** Saving or Loading Profiles) will be loaded. The Show will be saved under the name AsciiShow and should be renamed and saved again. **11** Saving and Loading a Show
Use the **X** button to leave the Auto CREATE menu. The data will only be saved to the RAM - permanently only when saving the complete Show to disk or floppy. **11** Saving and Loading a Show

2.12 Settings in the Setup Menu

By pressing this key MSDBOX Mode, you can set the confirmation menus (e.g. STORE) to be displayed on just the right-side TFT touchscreen or on all displays.
- Using the Executor Layout button on the grandMA light, ultralight or RPU, simulate the numbering of the grandMA's executors (Executor Fader 1 - 20, Executor Button 21 - 60; the additional executors can only be triggered from the Command Line. This is the easier way to use shows created on the grandMA on smaller consoles.
- By setting the soft key „Executor Layout" to „Wide", a ***grandMA*** light, ultralight oder RPU will use the same executor numbering as the „big brother" ***grandMA*** does. Therefore the first button executor has number 21.

Please have in mind, that in wide mode the printed labels on the consoles surface are wrong. The advantage of wide mode is, that all executors can be accessed by the command line. This is useful when porting shows from a ***grandMA*** into a smaller console.
- By clicking this key, four calibrating keys, numbered 1 to 4, will be displayed on the respective TFT display. Touch the keys using your finger or the supplied pen (special pen with soft rubber core). The display will automatically switch back after the last key is touched. The touchscreen is now calibrated and the settings will automatically be stored.





SETUP- Menu grandMA + Light + UltraLight

With the respective keys, the touch screens can be switched on or off. It is possible that a fault may cause the mouse to freeze in one position and can no longer be operated. In this case, the touchscreens can be switched off. For this, use function key F9 on the keyboard.

F9 will switch off all three touchscreens (emergency switch). To switch the touchscreens back on use the mouse.

To toggle the mouse function on both external monitors on and off. In AUTO mode, the software will recognize if a monitor is connected or not and will switch the mouse function for the external monitors on or off, accordingly. OFF **will not allow** any mouse function, while ON will keep the mouse function **activated** at all times.

With this key, the ***grandMA***'s internal speaker be switched on or off (not available on older ***grandMA***s).

To set the sensitivity of trackball and the encoders to coarse, fine or extra fine (16bit resolution).

With the PUSH key, you can set the Encoder's sensitivity when holding it down and turning.

Switching between the Motorfader functions (Executor Fader, Channel Fader)- not available on the MICRO

AUTO:
- Executor Faders: When switching between the Pages, the Motorfaders will automatically pick up the values stored last.
- Channel Faders: Faders adjust to the called-up values of the allocated channels.

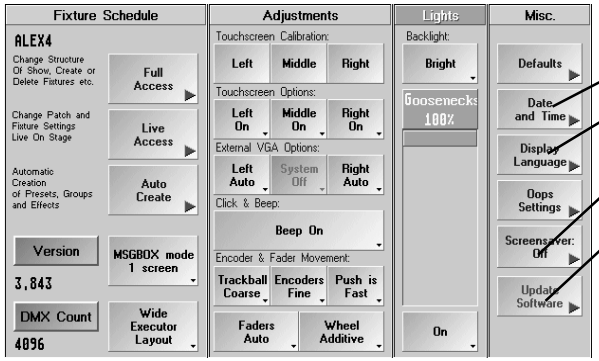
MANUAL:
- Executor Faders: When switching between the Pages, the stored values will be called up, but the Faders will **not** follow. To change a stored value, you have to use the Fader to manually set it to a higher or lower value.
- Channel Faders: Faders do not adjust automatically to the called-up values of the assigned channels. To change a stored value, you have to use the Fader to manually set it to a higher or lower value.
- DISABLED:

Faders without function
- Executor Faders: When switching between the Pages, the stored values will be called up, but the Faders will not follow.
- Channel Faders: Faders do not adjust automatically to the called-up values of the assigned channels.

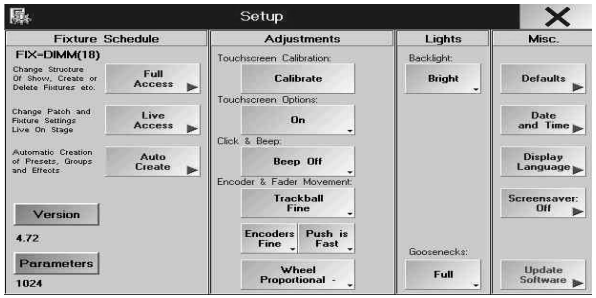
After switching from MANUAL to AUTO, you have to change the PageNo once so that the motor fader work again.

The wheel's functions for the dimmers:
- Additiv: All dimmer values will be changed simultaneously. If they reach "0" or "FF", they will be aligned.
- Incremental: All dimmer values will be changed simultaneously. If they reach "0" or „FF", the respective intervals will be maintained.
- Prop.+: All dimmer values will be changed in percentages and will reach "0" simultaneously.
- Prop.–: All dimmer values will be changed in percentages and will reach "FF" simultaneously.

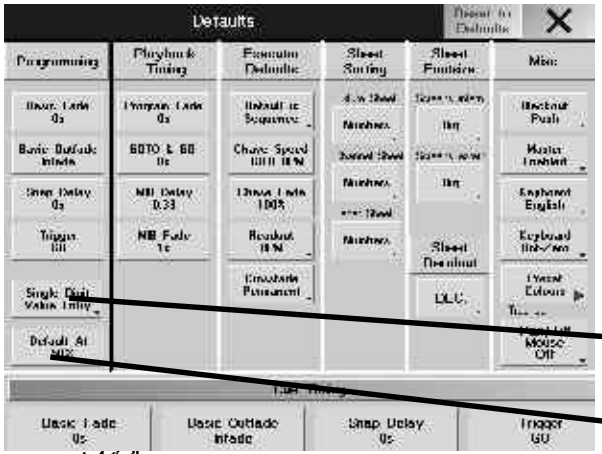
Please note, that with PROP+ a change of the value "0" is not considered a change.
Please note, that with PROP– a change of the value "FF" is not considered a change.
- Switch between "Light" and "Dark" display background illumination.
- The desk lamp can be switched either on or off with the ON/OFF key. The brightness of the desk lamp can be changed using a left mouse click on the blue bar or using the touchscreen. On the ULTRALIGHT and MICRO, you can only switch the brightness of the console lamp from FULL to HALF and vice versa.



Setup - Menü grandMA + Light + UltraLight



Setup - Menü MICRO



- ***DEFAULTS:*** By pressing this key, you will enter the DEFAULTS menu. All general presets can be set in this menu. **2.13** Settings in the DEFAULTS menu
- By pressing this key you will enter the DATE and TIME menu. **2.15** DATE and TIME
- By pressing this key you can change the display language.
- To switch the screen saver off an on. By pressing the key briefly, a window will appear where you can select the time after which the screen saver will activate.
- By pressing this key, you will reach the UPDATE SOFTWARE menu. The operating system, the operating software as well as the console software and the fixtures can be updated from this menu. **12** Software Update

● Close menu with ***X.***

2.12.1 OOPS Function Options*

If the OOPS function is activated, the will be able undo commands or values that you set. This function requires a large amount of system resources. This requires a lot of processor power, what could slow down the console performance. This could interfere the execution of programs; that is why you can switch it of completely or for individual functions. **1.9** OOPS function

General Enabled: If this key is set to Enabled, all OOPS functions are available – except for VIEWS commands and entries in the PROGRAMMER (both of which can be switched off separately; for further information see below)

General Disabled: Pressing the Enabled key next to General will toggle it over to Disabled and all OOPS functions will be switched off

Oops for Views : If the key is set to Enabled, OOPS functions can be used for VIEWS calls and creating or deleting VIEWS keys. Pressing the Enabled key will toggle it to Disabled and the OOPS function can no longer be used for VIEWS commands.

Oops for Programmer : If the key is set to Enabled, OOPS functions are available for all entries in the PROGRAMMER (selecting/deselecting or activating/deactivating Fixture or Dimmer channels). Pressing the Enabled key will toggle it to Disabled and the OOPS function can no longer be used for entries in the PROGRAMMER.

In strong bass enviroments (vibrations), please switch off all OOPS settings and “Autosave“ (disabled).

11 Saving and Loading a Show (Autosave)

● Close menu with X. Changes will be saved.

2.13 Settings in the DEFAULTS Menu

Pressing the DEFAULT key in the SETUP menu will bring you to the DEFAULTS menu.

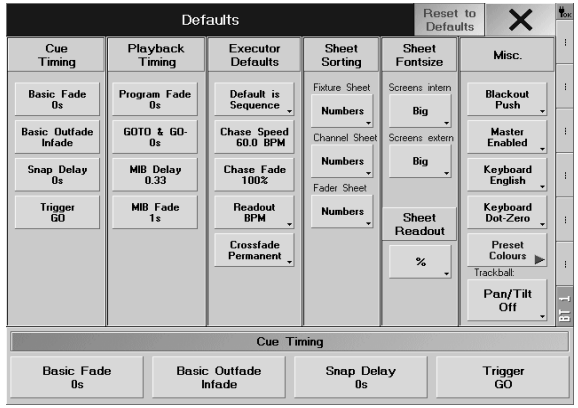
Programming

This column will display the default times and settings that will be used when storing Cues and Sequences. Using the Encoders, you can adjust the individual times and trigger calls.

DUAL DIGIT VALUE ENTRY: Entries performed over the numeric block, have to be done in the conventional way; entry 2_0 will yield a value of 20.

SINGLE DIGIT VALUE ENTRY: Entries performed over the numeric block will be done in factors of ten; entry 2 will yield 20, 0_5 will become 5, and 1_5 will yield 15 (without switching to DUAL).

Default AT: Here, enter the percentage value that the selected fixtures or dimmers are to take when the 2x AT command is used.



Playback Timing

The duration set for the **OFF Time** will be used when switching off Executors (OFF key).
GOTO & GO-: If a specific time is set when calling up a Cue using the GOTO or GO- function, the Cue will be called up with this duration. If Cue Timing was set, the Cue will be called up with the duration programmed in this Cue. You can overwrite the Goto Default duration at any time. **4.2.3** Default Sequence (Master Sequence)
Here you can enter a Default time for MIB DELAY and FADE. **5.1.4** Move in Black Option

Executor Defaults

Default is Sequence/Chaser: With this key, you can define, whether a newly programmed sequence will be created as a Chaser (one look after another running automatically) or as a Sequence (press go for cue 1 and then press go for ce 2 etc.) (default setting).
Chase Fade: Here, you can define the preset for Chase Fade.
Chase Speed: Here, you can define the default Chase Speed and Effect Speed.
Readout: By pressing the key, you can here switch the Chaser Speed between BPM (beats per minute), Hz (beats per second) and SEC (seconds).

The default Chaser Speed is also used as the default for the Effect Speed.

Crossfade Reload/Permanent: Here, you can define whether manual cross fading should be performed just in one direction (Reload) or in both directions (Permanent) when moving a fader set to cross fade.

Sheet Sorting

By the SORTING column, you define according to which aspects the fixtures and channels shall be sorted when setting up new windows. You can switch to the next option by clicking on the respective keys.

Sheet Fontsize

With the FONTSIZES column, you can define the type size of new windows.

Sheet Readout

Preset for the output of numbers in the OUTPUT, CHANNEL and PATCH windows.

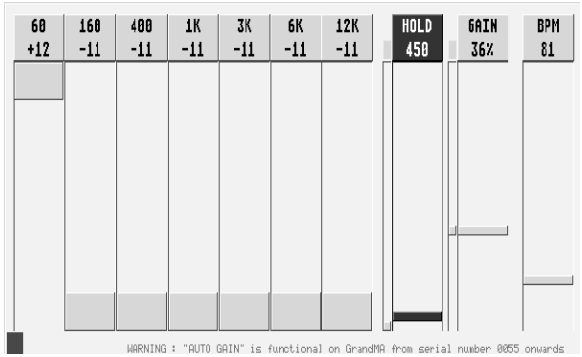
Misc

– Function of BLACKOUT key:
  PUSH: serves as push key (key)
  TOGGLE: will remain active when pressed
  DISABLED: switches the blackout function off
– Function of the GRANDMASTER FADER:
  ENABLED: Fader active
  DISABLED: Fader inactive
– KEYBOARD GERMAN/ENGLISH: Switch option for country-specific keyboards.
– KEYBOARD Dot-Zero: Switching the key sequence on the numeric keyboard to Zero-Dot. The key caps can be exchanged without any problems. **1.7.2** Layout and Controls ***grandMA*** item 19 ***or*** **1.7.1/3** Layout and Controls ***grandMA*** (ultra) light item 21
– With the **Preset Color** key, three different presets for the color scheme of displaying preset keys can be called up.
– Functions of the Trackball (not for ***grandMA light and Ultra-light***):
Pan/Tilt: - Trackball button on (LED is on) - Trackball controls Pan and Tilt
OFF - Trackball button off (LED is off) - Trackball has no function

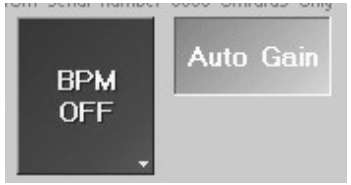
Pan/Tilt: - Trackball button on (LED is on) - Trackball controls Pan and Tilt
Mouse - Trackball button off (LED is off) - Trackball controls the mouse, using the Prev., SET and Next keys, you can operate the appropriate mouse buttons.

Pan/Tilt: - Trackball button on (LED is on) - Trackball controls Pan and Tilt
Mouse/OFF - Trackball button (LED blinking) - Trackball controls the mouse, using the Prev., SET and Next keys, you can operate the appropriate mouse buttons.
- Trackball button off (LED off) - Trackball has no function
RESET DEFAULTS key: Will reset all changes back to factory settings.
Encoder labelling for figures within the Cue Timing column.

Use SAVE TO GLOBAL USER PROFILE in the logged-in user's profile to save changed DEFAULT settings in the TOOLS menu. You can reload these individual DEFAULT settings with RESTORE FROM GLOBAL USER PROFILE.



Triggermonitor



2.14 Setting Sound Signals

The sound signal is used for triggering Chasers and Sequences. In other words, this is an electronic, graphic equalizer. In order to slowly balance any fluctuations of the audio signal, a specific compressor function has been integrated.
You will find an integrated adjustable HOLD-OFF function. This function will prevent any double triggers (for example: with fast BASSDRUM beats). Beats will be automatically recognized via the incoming sound signal (BPM).

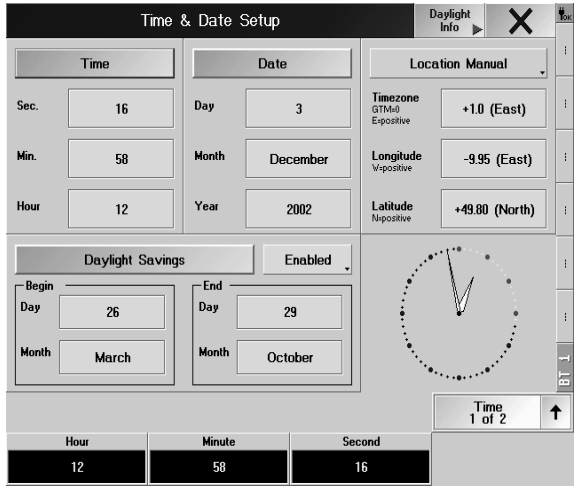
- ***Press TOOLS***
- Press Button **Sound Settings** to open the menu

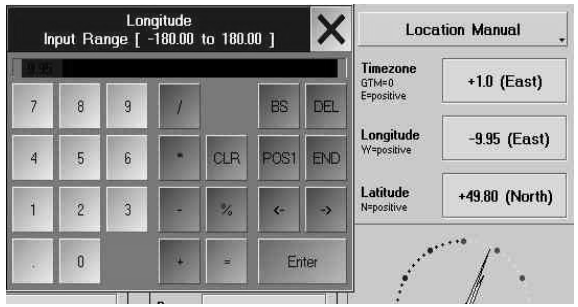
To set an equalizer, pull the respective "slider" to the desired position. In the left lower corner, there is a visual trigger signal (monitor) for your orientation. The small dot on the left side of the HOLD Function will indicate the remaining HOLD time. The small dot on the left side of the GAIN indicator will show the compression rate of the audio signal.
The right small dot will indicate the state of compression of the audio signal. The sound signal is visualized in the lower left part of the display. The analysis of the sound signal will be indicated in the smaller right part of the window, including indication of the recognised BPM (Beats per minute). By moving the BPM slider, the beat can be set. The next-possible beat will be recognised from the incoming audio signal and will be used to control the BPM.
If the BPM key is ON, the currently recognised beat will be used. When switching the BPM to OFF, the last recognised beat at the time will remain unchanged and will be used. You can adjust the value using the BPM slider.
If the Auto Stop key is on ON, the Chase or the effect will be stopped when there is no sound signal. If the Auto Fader key is also on ON, the Chase or the effect will be faded out when there is no sound signal.
When you switch the Auto Stop key to OFF, the Chaser or effect will continue with the latest BPM value

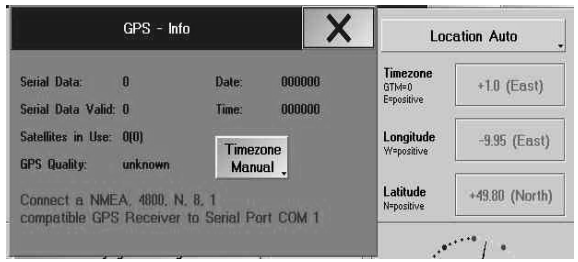
measured.
The AUTO GAIN function can be used for ***grandMA***s from serial no. 0055 and later (key will turn dark-grey key, HARDWARE modification). ***grandMA*** ultra-light allows **only** Auto Gain.

For *grandMA*s with serial no. up to 0054, this key can *not* be used.

- You can leave this menu by pressing the X key; all settings will be stored.




Longitude
Input Range [-180.00 to 180.00]
Location Manual
Timezone GTM=0 E=positive +1.0 (East)
Longitude W=positive -9.95 (East)
Latitude N=positive +49.80 (North)
7 8 9 / BS DEL
4 5 6 * CLR POS1 END
1 2 3 - % <- ->
. 0 + = Enter



2.15 TIME & DATE Menu

- Pressing the TIME and DATE key in the SETUP Menu will open the following menu.
- You can set TIME and DATE with the encoders below the display. (You can switch encoder functions by pressing the button Time).

Manual or automatic positioning via GPS

The times of sunrise and sunset change according to your geographical position. If you know your position, you can enter it in the LOCATION MANUAL mode; if moving around frequently (e.g. when travelling on a ship), it is advisable to determine your current position by a GPS receiver and let the values be inserted automatically.

Button display: **Location Manual**, fix entry of values.
Set position for the automatic control of (**9.3** Agenda Menu) sunrise and sunset calculation. Clicking on the respective keys will open a window, where the position can be set.
Information regarding the respective position can be looked up in a software program that can be downloaded from the internet at: www.djuga.net/winglobe.html.
or:
Button display: **Location Auto**, values are automatically used by a connected GPS receiver.
Pressing the button will open the **GPS-Info** menu. In this menu, you can modify the settings for a NMEA GPS receiver connected to the serial port. This receiver will then determine the position of the ***grandMA***. This can be especially useful e.g. on ships cruising on the oceans. For best satellite reception, check for an unhindered view to the sky when setting up your equipment.
If the key is set to **Enabled**,the clock will automatically switch between summer and winter time. Pressing the key deactivates this function (Disabled). Pressing the respective key in the **Begin/End** field will open a window where you can set the beginning and the end of the summer time.
Pressing this key will open a sheet, where the calculated times for Dawn, Sunrise, Sunset and Dusk for yesterday, today and tommorrow are listed.

- Leave this menu with the X key.

2.16 User Management*

The new user management and security features include:
- Temporary simple desk locking mechanism.
- User management for up to 32 users.
- Users have privilege levels.
- These levels of privilege can prevent an inexperienced user from destroying show data.
- Users can have their own user profile.
- User profiles include views and default settings, even a set of default views that can be loaded into any show.
- Multiple users can share one user profile (although they can have different privilege levels).
- Forced login when the desk starts up as an option.

When you get a new desk, or you update your old version:
All user management features are disabled by default. If you do not touch them, you will not notice a difference to the older versions of ***grandMA*** software. Internally you will be automatically logged in as administrator, working with a default user profile.
The user management is not show-dependent. It is affecting all shows on your desk.
The Micro has only one default-user, no login and no User-profiles. Parts of the user profles can be added from the loaded show. All following chapters marked with „*“ are not available for the Micro.

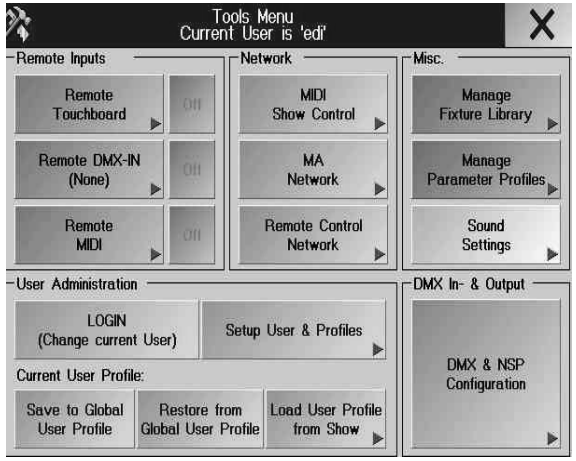
2.16.1 Locking the Desk

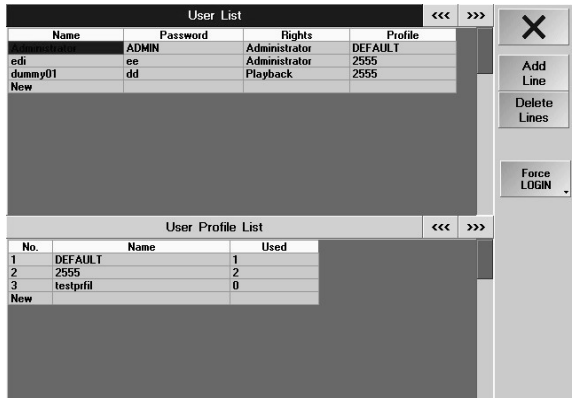
Locking the desk is a method to temporarily protect your desk against misuse from inexperienced users. It is not suitable for permanent protection.
Locking the desk does not affect the output. All programs that are running continue to do so. But the surface of the desk is inaccessible, even moving the grand master fader will be ignored.

Activating Desk Lock:
- Press CTRL-PAUSE on the PC-Keyboard
- All touchscreens will show DESK LOCKED.
- Desk is locked.

Deactivating Desk Lock:
- Press CTRL-PAUSE on the PC-Keyboard again.
- All touchscreens will restore in the original screens.
- Desk is unlocked..

CAUTION:
Due to the fact, that the grand master fader is not motorised, master dimming may jump to an unwanted level upon deactivation of desk lock. So have a look at it before you deactivate the desk lock! For the ***grandMA*** ultra-light this is also valid for all faders.





2.16.2 Concept of User Profiles

- The desk has a list of users.
- Each user can have his own user profile, but he can also share a profile with other users.
- A user profile includes views, quikey arrangement and playback settings.
- Part of each user profile is global and independent of the currently loaded show. This part is used to store and load default Views, Setup and Default settings (Encoder and Trackball sensitivity and Wheel function **2.12** Settings in the Setup menu Furthermore Cue Timing, Executor Defaults, Sheet Sorting, Sheet Fontsize, Sheet Readout, Misc., Preset Colours, Attribute Grouping and Store Options **2.13** Settings in the DEFAULTS menu).
- Each show contains a full set of local user profiles. These local user profiles can be stored as default in the global parts and they can be loaded from there.
- When saving a show on floppy disk, all users registered to this console will also be saved with all default settings. When loading a show from floppy disk to another console, all users including all default settings will automatically be transferred to the new console. Individual users can use these profiles for a particular show or for other shows in which this console is used.

2.16.3 Creating a new User

To create a new user, you need to have administrator privilege level:

- Go to ***Tools*** menu and ***User*** / ***Setup***
- Press the ***New*** in ***User List*** and type name and password. Select and confirm Rigths and Profile by turning and pressing the encoder,
- Change the rights (privilege level) for the new user.

- By default, the new user utilizes the DEFAULT user profile. If the user utilizes a different or an independent user profile, it will change his user profile. If you create a new user profile in this way, it is initialised with the default profile.

Beside the users which are in the list, there is always one hidden administrator.
You can not delete or change this administrator.

His user name is ***ADMIN*** and he is using the DEFAULT user profile.
Login becomes enabled if at least one user is in the visible user list.
The presence of the ADMIN user destroys any real security. On the other hand you will never really loose access to your desk

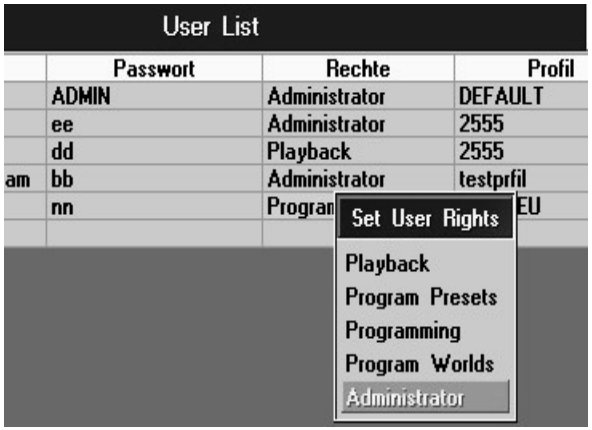
2.16.4 Deleting an User

To delete a user, you need to have administrator privilege level:

- Go to TOOLS menu.
- Go to USER / CONFIGURATION.
- Select the user you want to delete.
- Press the DELETE USER key.

- The user will disappear. If he was the only one to use a certain user profile, this profile will also be deleted.

Please note, that you can not delete yourself from the list.



2.16.5 User Rights*

To change the rights (privilege level) of an user, you need to have administrator privilege level:

- Go to ***Tools*** menu.
- Go to ***User/ Setup***.
- Edit the RIGHTS field of the respective user you want to change.

This is because you are in the user manager menu and have administrator rights. If you were to change that, you would lock yourself out from this menu.

At the moment, the following privilege levels are implemented:

PLAYBACK:

- User can use all playback functions.
- He can load shows.
- He has no access to any function that would change the contents of the show, beside from playback parameters.
- Even if the user has changed playback settings, the show will not be saved. The next time the desk starts or the show is loaded the show integrity will not have been compromised.

PROGRAMMING PRESETS:

- Additionally, the user can create Presets, other programmings are not possible.

PROGRAMMING:

- The user has full access to all functions, except user management, software updating and „worlds".

PROGRAMMING WORLDS:

- Additionally, the user can create and modify „Worlds".

ADMINISTRATOR:

- Along with all other functions, User Management and Update of Desk Software are enabled.

Some ***grandMA*** operators may find it helpful to create an user with playback rights only, for their own personal use. After they have finished programming, they log in as this playback user, so they can be sure that they will not change anything in their newly completed show data (of course they should save their show before they log in as playback user!).

It is not necessary to save the whole desk after you have changed something in the User Manager. All data of the User Manager is immediately saved when you leave the User Manager menu!

2.16.6 Login*

Login is only enabled if at least one user appears in the user list (TOOLS menu / User Configuration).

Manual login:

- Go to TOOLS menu.
- Press LOGIN key.

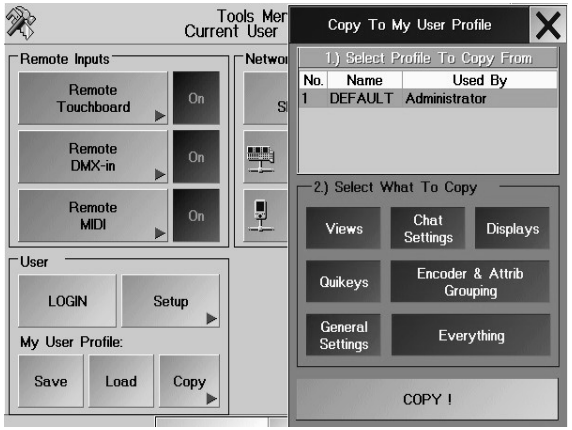
Never push Login without knowing the password! Otherwise you can only log in by "ADMIN".

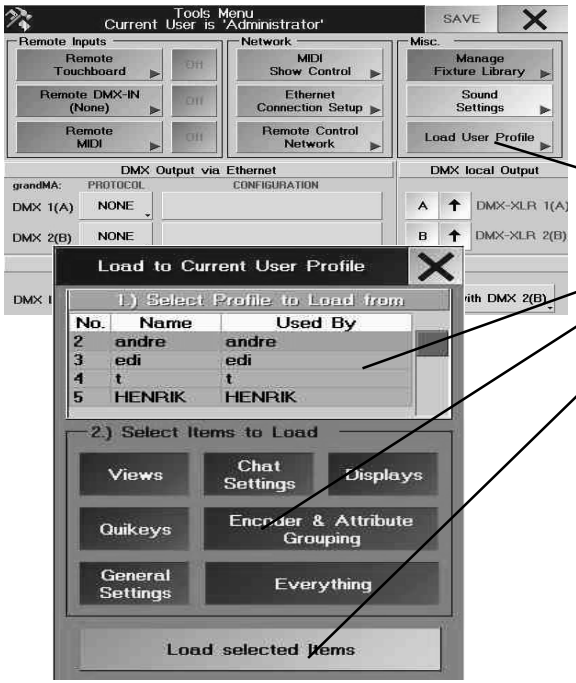
All touchscreens will show LOGIN, and you have to enter a valid user name.

During LOGIN, the surface of the desk is locked.

LOGIN does not affect playback. All programs that are running continue to do so.

After a successful login, the views of the corresponding user profile will appear on the screens. Furthermore, the user's saved setup and default settings will automatically be loaded, too.





If a user loads a show for the very first time (he has never used this show before), this show will be loaded with the previously used profile and NOT with his personal user profile. If needed, the personal user profile can be loaded afterwards.

".

2.16.8 Saving* or Loading Profiles

User profiles are saved independently from the show and can thus be loaded for any other show afterwards.

- Go to the ***Tools*** menu and ***User*** / ***Setup***.
- Under **User Profile List** in the **New** line, enter a name for a new profile.
- Select the user cell under **User List** in the **Profile** column. Press the Encoder , select the profile, and take over by pressing it again.

If this user is logged in, the seetings will be saved to this profile when saving the profile (Save User Defaults).
If this user is not logged in, he receives a message, that his profile is empty. Confirm this message and a selection menue pops up:

1) select a profile
2) select what to copy (button becomes dark green) or select ***Everthing*** for complete profile

- confirm with ***COPY!***

User with rights higher than PLAYBACK can press ***Copy*** and change profiles of other user (not his own profile)
Save: save current settings (independently from the actual show) in your User Default Profile
Load: load your User Default Profile (independently from the actual show)

Loading user porfiles or part of profiles with the Micro:

- press ***TOOLS***
- press Load **User Profile List**.
- select user an items in the ***Load to current User Profile*** menu
- confirm with ***Load selected Items***.

2.16.8 Forced Login at Desk Start*

Forced Login is enabled only if at least one user appears in the user list (TOOLS menu / User Configuration).
To change the Forced Login setting, you need to have administrator privilege level:

- Go to ***Tools*** menu.
- Go to ***User*** / ***Setup***.

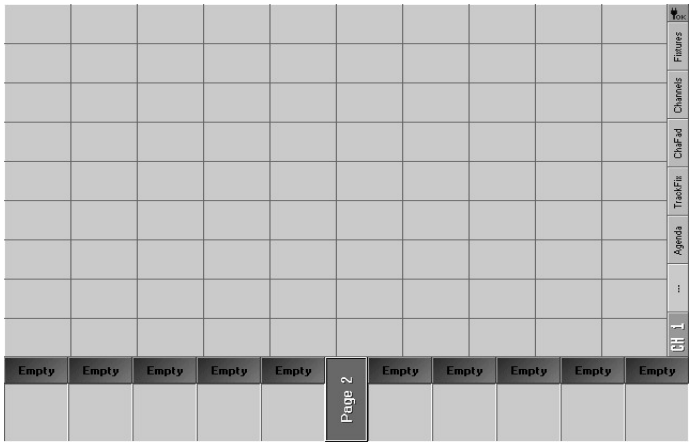
- Press the FORCE LOGIN AT DESKSTART key.

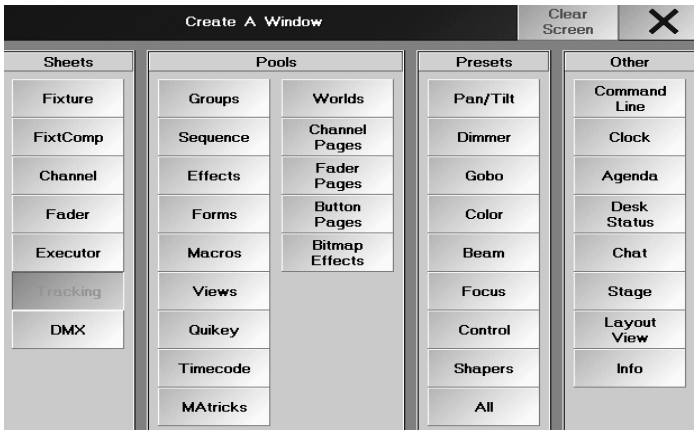
If you switch on FORCED LOGIN, upon every desk start or loading of a show, the desk will automatically bring up the login screen.
If FORCED LOGIN is switched off, upon desk start the desk will automatically login the user who was last logged in.

2.16.9 Who is logged in at the moment?

- Go to the ***Tools*** menu.
- Look at the title bar of the window.

It says "***Tools*** Menue , current user is ...





3 Creating a Show

3.1 CREATING A WINDOW

● Pressing an “empty” space on one of the three TFT displays or the external monitors. The CREATE A WINDOW menu will open.

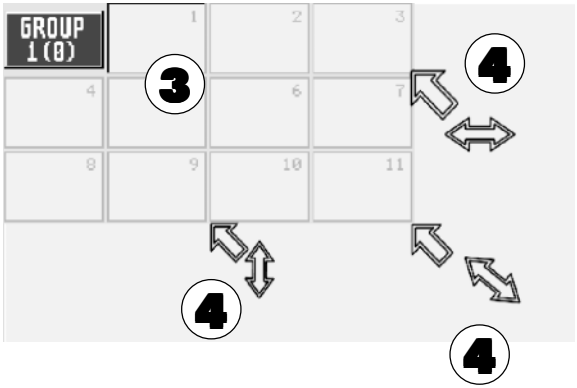
3.1.1Listing of individual windows and functions

Sheets:

- ***CHANNEL:*** This window will display dimmer channels as figures. You have direct access to channels and values here. **3.5** Accessing Dimmer Channels directly
- ***EXECUTOR:*** Within this window, you will have the option to display a sequence, which is assigned to an EXECUTOR fader or an EXECUTOR button. Among other options, this is where global times can be changed. **5.3** EXECUTOR window
- ***FADER:*** Selected dimmer channels can be displayed as either bar or figure within this window. Here you will also have direct access to channels and values. **3.5** Accessing Dimmer Channels directly
- ***FIXTURE:*** Displays all fixtures and their various functions, values, status etc. Here you will have direct access to the fixtures, functions and values. **3.4** Accessing Fixtures directly
- ***TRACKING:*** In this window you can display a Sequence that is assigned to an EXECUTOR fader or EXECUTOR button. Here, as opposed to the EXECUTOR Sheet, all values or times can be displayed separately for an entire sequence. Cues are displayed vertically with channel and fixture data displayed horizontally. Any value/time can be modified separately for any channel. **5.4** TRACKING window
- ***DMX:*** In this window, all DMX output channels are displayed as values, as they are actually patched. It is also possible to perform drag and drop patching operations from within this window. **2.10** DMX Output window

Pools:

- ***GROUPS:*** Displays, creates new, edits and calls up fixture and dimmer groups. **3.3** Creating and Calling up Fixtures and Dimmer groups
- ***SEQUENCE:*** In this Pool, all the created Sequences are displayed. This way, assignments to Executors can be made very quickly. Sequences can be renamed, copied and deleted from within this window as well. **5.1** ASSIGN menu
- ***EFFECTS:*** Displaying and Calling up Effects. **6** Effects
- ***FORMS:*** In this POOL, all created forms will be displayed. Here, you can rename, copy or delete forms. **6.7** Creating and Storing Virtual Forms (EDIT FORMS)
- ***MACROS:*** In this Pool, all the created Macros are displayed. It is also possible to store new macros and edit existing ones from within this window. **9** Macros and QUIKEY
- ***VIEWS:*** Displaying and Calling up Views. **3.2.2** View Pool
- ***QUIKEY:*** Displaying and creating soft versions of existing console keys and commands. **9** Macros and QUIKEY
- ***TIMECODE:*** Recording, Playing back, Editing and Storing SMPTE LTC Timecode controlled operations. ❄ **8** Timecode
- MAtricks: Here, you can create, save and directly call up different selection groups. And you can copy or move values that were set by the Circular Copy function from one fixture to another. **3.9** MAtricks



- ***Worlds:*** Here, you can create, call up or manage so-called „Worlds". Worlds are important, when you e.g. want to work in the Multi-User Mode, or you just want to make some Fixtures „invisible". **15.7** Worlds
- ***Channel Pages,*** In these pools, "buttons" will be displayed for all pages. The pages can be called up quickly
- ***Fader Pages,*** by just clicking on them. Here, you can change the names of the pages,
- ***Button Pages:*** you can copy or delete them. **5.5** Managing Pages
- ***Bitmap Effects***: Here, you can create, call up or manage Bitmap-Effects.

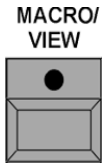
Presets:

PAN / TILT, DIMMER, GOBO, COLOUR, BEAM, FOCUS, CONTROL, SHAPERS and ALL:
Creates new, edits and calls up individual PRESETS with name and number. **3.7** Creating and Calling up Presets

- ***COMMAND LINE:*** Lists executed commands by their names. Also to enter commands using the keyboard. **10** Command Line
- ***CLOCK:*** Display window analog or digital clock. Switch by pressing the Analog button.
- ***AGENDA: I***n this menu, you can create automatic controls by time/date or sunrise/sunset. **9.3** Agenda menu
- ***DESK STATUS:*** Displays the current software versions:
  VXWORKS: Operating system with date
  GrandMA: Main program with date. If this line is displayed in green, the unit supports 4096 DMX channels
- ***IO SUBSYSTEM:*** Program for the second built-in computer (Motorola) Internas, system load, etc.
- ***Net Log:*** (Presently, without any function)
- ***Chat:*** For communication (Chat) with other ***grandMA*** users in the network.
- ***Stage:*** To display a simplified stage model with all fixtures. In this window, the beam of light will only be displayed as a line. For Scanners having a color mixing unit or Dimmer channels, to which a color has been assigned, this beam of light represents the chosen color and its position. Additionally, fixtures can be selected directly by clicking on them. **2.2.3** Position of Fixtures and **2.2.5** Adjusting individual Fixture Groups, Assigning Colors for Dimmer channels
- ***Clear Screen:*** Will delete all windows on this display/monitor (but not the saved views)

● Will close this window discarding all changes.

Select the window to be created with a left mouse click.
If you wish to move the newly created window, click and drag the window border.
There are 3 ways to enlarge or reduce a window: Move the cursor carefully to the lower or right border or corner, until you will see a small double-arrow next to the cursor. Now click and drag holding the left mouse key. By moving the mouse, the window can now be resized according to your requirements.
One of the most effective ways to work with the ***grandMA*** is by using the touchscreen and the encoder which is located next to each display..



3.1.2 Deleting a window

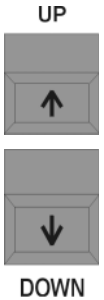
● Press the DELETE key once. Right click on the title bar of the window.

Or:

● Click into the left corner (yellow dot) of the title bar. In the next window, confirm with YES or DELETE.

Or:

● When pressing the top and bottom VIEW keys simultaneously, all windows on this TFT display will be deleted.



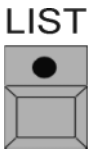
3.1.3 Scrolling with the UP and DOWN hard keys

● Pushing the UP and DOWN hard keys will scroll a whole page up or down inside the menu or pool window that has the input focus (dark blue title).
Pushing down the UP or DOWN hard key while holding down its opponent will scroll to the beginning or to the end.
If there is an active popup dialog on screen, the UP and DOWN hard keys work as UP and DOWN cursor keys for navigation inside the dialog..

3.1.4 Temporary Opening of Windows*

Important windows can be opened temporarily and quickly on the right Display.

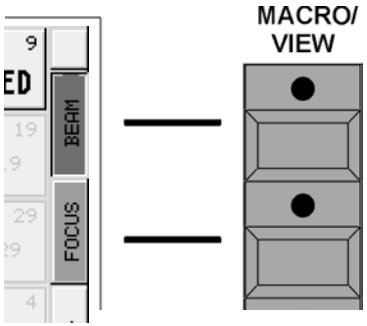
This function is especially useful on the grandMA light and ultra-light.

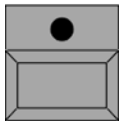


Hold the List key.
By additionally shortly pressing the function keys, the respective window will open and the function be switched off again afterwards:

	Press 1x	**Press 2x**	**Press 3x**
Channel	Channel-Sheet	Fader-Sheet	
Fixture	Fixture-Sheet	Stage window	
Group	Group pool	World pool	
Sequence	Sequence pool		
Executor	Executor Sheet	Tracking Sheet	
Page	Channel Pages	Fader-Pages	Button Pages
Macro	Macro pool		
Preset	all preset windows will be opened one after the other		
View	View pool		
Effect	Effect pool	Timecode pool	

By pressing the ESC key, you can close the temporary windows at any time.n.





3.2 Storing VIEWS

The soft VIEW keys running down the righthand side of the touchscreens and external displays can be assigned with views.
The physical keys located beside the touch screens can be used for direct access to the VIEW soft keys on the screens.
What can a (soft) key be used for?
- You can store **one or more** displays on it,
- You can store **all** currently created windows on **all** screens and both external monitors on it,
or - You can store a Macro **9.1** Creating Macros
- Organize a display or monitor **3.1** CREATING A WINDOW

● Press the STORE key once (STORE LED is on).
● Press a VIEW key or a VIEW soft key once. The SELECT VIEW window will open.
● Enter a name for the VIEW using the keyboard. The new name will be displayed in the top line.
- By pressing the keys 1–5 (selected key will turn dark-grey), you can select the display to be stored.
- Pressing the key ALL SCREENS will store ALL displays on one view key.
● With the OK or ENTER key you can complete the store and assign process.

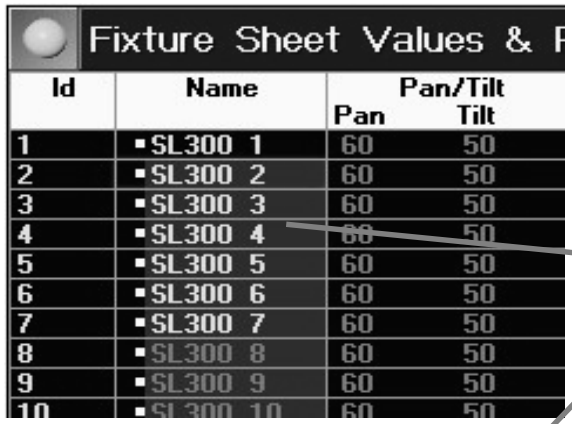
3.2.1Assigning VIEWS

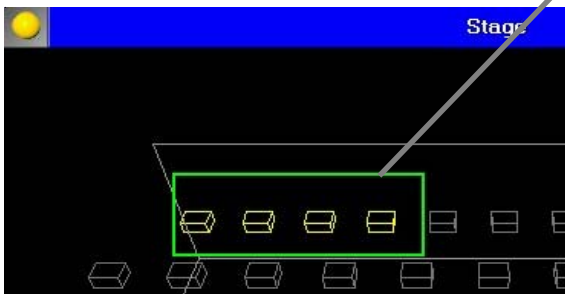
All created views can by assigned to any view key.
Click on the view key with the right mouse key. The window SELECT VIEW will appear. In this window, make a left click on the VIEW you require:

▬ The table shows all created VIEWs.
- The QTY column shows the number of stored displays and external monitors for the individual VIEWs.
- Scrolling is possible by dragging the scrollbar on the right side.
- Selecting a VIEW in the table will assign this view to the chosen key.

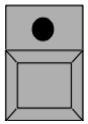
3.2.2View Pool

In the View Pool, all created Views are displayed and can be called up directly by selection.
.





FIXTURE



3.3 Creating and calling up Fixtures and Dimmer GROUPS

Important and frequently used combinations of fixtures and dimmer channels can be stored in groups. (max. 999 groups). Makes selecting of group of lamps very easy and quick. The same lmap can be member of several groups.

3.3.1Creating fixture or dimmer groups

Create a GROUP window on one of the TFT touchscreens. **3.1** Creating a Window

- Use the touch screen or make a left mouse click on the individual Fixture within the FIXTURE SHEET or click on the Dimmer channels in the CHANNEL or FADER SHEET.
- The Fixtures and / or dimmer channels that make up a group can be recalled one at a time in sequence. The order in which they are recalled is same as the order in which they were selected when the group was originally stored. When selecting Fixtures or Channels for a group, make use of their order so that you can step through them individually using the NEXT/PREV key.

Or**

- Press the FIXTURE key for a fixture group or the CHANNEL key for dimmer groups (LED is on).
- Pressing the ENTER key will lock the Fixture or Channel in the Command Line.
- Enter the number of first fixture or dimmer channel, using the numeric keypad.
- Now you can select the next fixture or dimmer channel to be selected by using the "+" key.
- The THRU key on the numeric keypad will select a range. All fixtures and dimmer channels **from... to** including the last number entered.
- Using the "–" key, the fixture/dimmer channel with the number you input will **not** be selected.
- The selection can be confirmed with ENTER.

The **selected fixtures** or channels will be displayed in the FIXTURE or CHANNEL window in yellow characters.

- Press the STORE key once (LED within the key is on). Using the touchscreen or left mouse click, select the desired group key in the GROUP window on the display. The selected fixtures are now stored in this group (STORE LED is off).

You can now name this group using the keyboard. Enter the name or description and confirm with ENTER.
Press the CLEAR key once. This deselects the group of fixtures and dimmer channels.
For further groups, simply repeat the process.

Delete Groups

- press ***DELETE*** button
- press groupbutton of relevant group

2.11 Creating presets, effects and group keys automatically

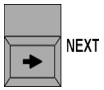
3.3.2 Calling up groups

Groups can be called up by:

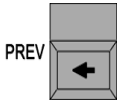
- A left mouse click
- Direct touch on screen

● Pressing the GROUP key once, entering the group number with the keyboard or keypad and confirming with ENTER.
● Press the GROUP key once. Pressing the ENTER key once will lock GROUP as preset in the Command Line. Then, enter the group number on the numeric keypad and call it up pressing ENTER.

By pressing the CLEAR key once, all selected Fixtures and Channels are deselected (no longer displayed in yellow).
Proceed as follows to separately activate selected Fixtures/Dimmers or called-up groups in the desired/stored order:

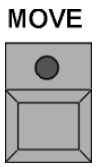


● NEXT key once within a group or selection: forwards



● PREV key once within a group or selection: backwards

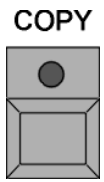
● Pressing the SET key once reselects all Fixtures and dimmer channels in the group.
If there are more groups than can be displayed in the GROUP window, you can scroll down within every "active" window (title bar in dark blue) on every screen, by using the encoder wheel on the right of the respective touchscreen or the up/down key.



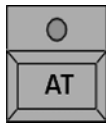
3.3.3 Moving GROUP keys within a window**

● Press the MOVE key once (MOVE LED lights up)
● Using the touch screen or left mouse key, click on the GROUP key and hold it down (a small hand appears).
● Drag the key to another location within this window and then release it.
or
● press ***MOVE*** twice ***(LED flashes)***
● Using the touch screen or left mouse key, click on the GROUP key and hold it down (a small hand appears)
● Drag the key to another location between two buttons within this window and then release it.

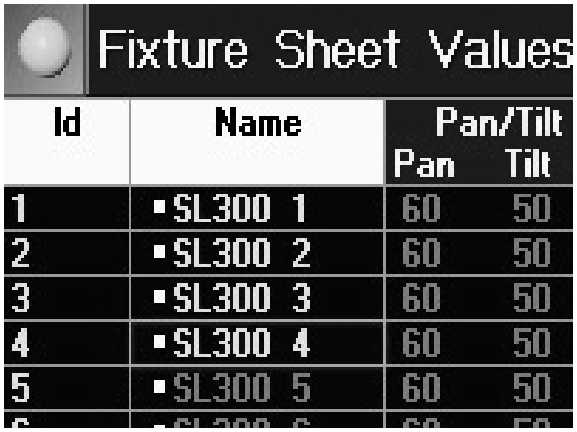
3.3.4 Copying groups**



● Press the COPY key once (LED is on).
● Select the Group Keys in the GROUP window. By selecting several groups one after the other, that set of groups can be copied together
● Press the AT key once (LED is on).
● Click on the position for the copied group in the GROUP window.
Confirm with ENTER.



The functions Move, Copy or Delete can also be used for Executors, Pages, Sequences or Effects.



3.4 Accessing Fixtures directly (in the FIXTURE SHEET)

Individual fixture functions can always be accessed directly and multiple fixtures can be controlled at the same time. The selection will determine which fixtures react to Direct Access procedures (selected fixtures will be marked in yellow writing in the FIXTURE window).
Within the FIXTURE window, you can locate, select and execute all functions for all fixtures.
Select the fixtures, where you wish to modify a value (the selected fixtures will be displayed in yellow characters).
Selection:

● Call up a fixture group. **3.3** Creating and calling up Fixtures and Dimmer GROUPS

or:

● Select fixtures using the touchscreen.

or:

● Select fixtures by using the Fixture key and the numeric keypad. **3.3** Creating and calling up Fixtures and Dimmer GROUPS

or:

● A left mouse click on the individual fixtures.

Select the requested function by clicking on the relevent key on the Preset Control Bar. Switch on the Preset Control Bar. **3.4.8** Options in the Fixture Window.
Values can now be changed via the encoders, located below the right TFT display (all functions of the encoders will be displayed directly on the screen):

● The various functions can now be toggled by pressing the FEATURE key.

or:

● The Trackball affects the PAN/TILT function only (if switched to Pan & Tilt).NOTE: Fixtures, the beams of which cannot reach the preset position, will go to Blackout; this way, no undefined positions will be triggered.

or:

● The wheel affects dimmer values only.

or:

● Any value may be altered by clicking and holding on it with the middle mouse key and moving the mouse.

For storing settings. **4** Cues and Sequences
For creating Presets. **3.7** Creating and calling up Presets
To call up or create Effects. **6** Effects
If you wish to modify the selection **or** the activated values of the fixtures:

● Press the CLEAR key:

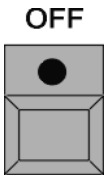
When pressing the CLEAR key the **first** time, the selection of fixtures will be deselected from the OUTPUT window (yellow characters turn grey).
The **modified** (active) values will be kept and displayed with red background.

● Press the CLEAR key again:

When pressing the CLEAR key the **second** time, the activation of modified values will be canceled (they will no longer have a red background).

● Press the CLEAR key one more time:

When pressing the CLEAR key the **third** time, all modified values will be reset (default or to their original setting prior to the activation).
After pressing the CLEAR key for the first time, the yellow LED in this key will flash. This means that only the selection was deleted. When you select other fixtures or dimmer channels now, the yellow LED will no longer flash.



Auch die Selektion von einzelnen Scannern kann gelöscht werden.

- Press OFF key 1x (LED is on).
- Click on the Fixture key in the Group Window or on the Fixture Name in the Fixture Sheet.

You can also deactivate parameter values of individual fixtures (Output will be set to Default or to an outputing cue value).

- Press OFF key 1x (LED is on).
- Click on the activated value in the Fixture Sheet.

You can also delete activated values of entire function groups of selected fixtures (Output will be set to Default of activated cue value).

- Press OFF key 1x (LED is on).
- Press a key for the respective function on the Preset Control Bar or click on that function within the Fixture Sheet.

Special feature in Multi User mode

If multiple users (having different user profiles) on different consoles or PDAs are connected wihin one session, the program will assign the changing of values to the very user who had actually made that specific change. That means: commands like CLEAR or STORE will only refer to the changes of the respective user, without affecting the programming work of another user.

Changes will be indicated by different colors in the Fixture, Channel and Fader sheet:

- red background = these values were set by the user of this console (only these values will be stored, OOPSed, etc.)
- grey background = these values were set by the user of another console (these values cannot be changed).

In order to modify grey, i.e. „alien“ values, you have to select them in advance.

When chaning these values, they receive a red background and, thus, become „own“ values; on the other consoles of this session, these values will then immediately be displayed in grey.

So, if fixtures of multiple users are selected, the last modification will be assigned to the executing user (LTP mode).

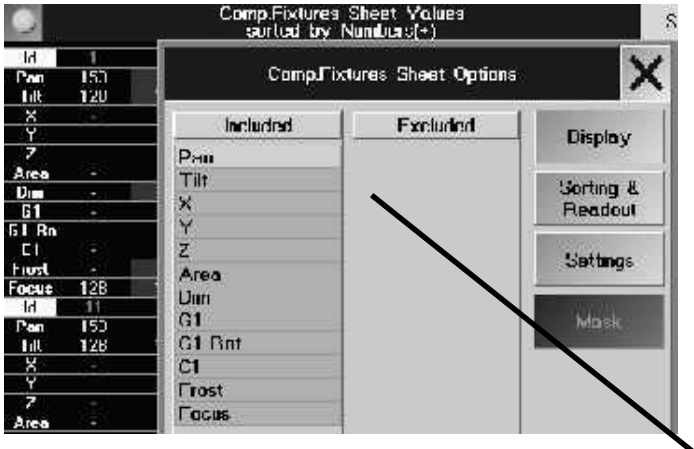
Compact Fixture Sheet

The Compact Fixture Sheet works in parallel to the Fixture Sheet, i.e. selections and changes are being displayed in both Sheets. The difference lies in the arrangement of the fixtures and features as well as the adjustable number of visible fixtures and features on the screen.

Comp Fixture Sheet Options

As opposed to the Fixture Sheet, you can here make the following additional selections under OPTIONS / SETTINGS:

ORIENTATION:



Left - Right the fixtures will be displayed with ascending ID numbers side by side; set the number of columns using COLUMNS
Top - Bottom The fixtures will be displayed with ascending ID numbers from top to bottom

WRAP AROUND:
If "On" has been selected, the size of the Channels will be adjusted automatically, when the number of Channels changes.

NAME FIELD:
ON The Fixture names will be displayed
OFF The Fixture names will not be displayed

COLUMNS:
Here, you can enter the number of columns on display (1 - 60)
NOTE: If you choose too many columns, it will not be possible to display the values in the cells completely.

MASK

With the MASK function, you can choose parameters to be displayed in the CompFixture Sheet. One touch on the parameter in the INCLUDE column will transfer this parameter to the EXCLUDED column and it will not be displayed in the Sheet any longer. Vice versa, you can beam a parameter from the EXCLUDED column to the INCLUDED column.

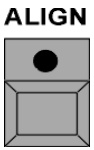
3.4.1 The ALIGN Function

The ALIGN function allows you to apply ratios to ranges of parameters. Four different **modes** are available.
ALIGN key pressed once (LED is on).

1 x ALIGN

2 x ALIGN

3 x ALIGN



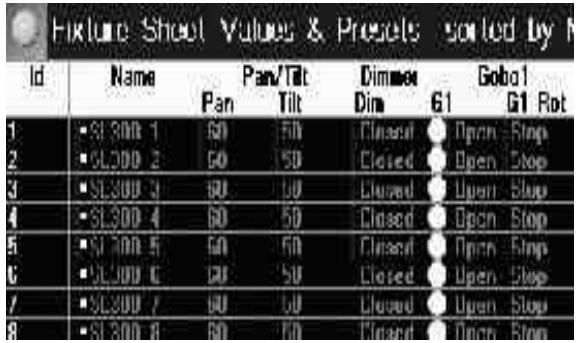
4 x ALIGN

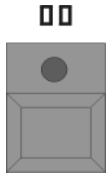
● ALIGN key pressed once (LED is on).
When changing the activated values, the value of the ***first*** selected Channel/Fixture will be taken as the starting value (will not be changed), while the value of the last selected Channel/Fixture value will be the one modified most, and all values in between will be distributed evenly.

● ALIGN key pressed twice (LED is on).
When changing the activated values, the value of the ***last*** selected Channel/Fixture will be taken as the starting value (will not be changed), while the value of the first selected Channel/Fixture will be the one modified most, and all values in between will be distributed evenly.

● ALIGN key pressed 3 times (LED is on).
When changing the activated values, the value of the selected Channel/Fixture(s) ***"in the middle"*** will be taken as the starting value (will not be changed). The value of the ***first*** and ***last*** selected Channel/Fixture will be the ones modified most, and all values in between will be distributed evenly.

● ALIGN key pressed 4 times (LED is on).
When changing the activated values, the ***middle*** value will be the one modified most, the values of the ***first*** and ***last*** will not change, and the values in between will be distributed evenly.

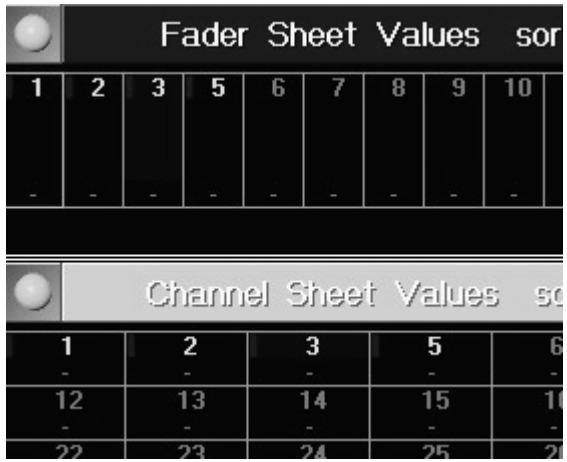


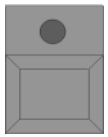


3.4.2PAUSE Function

With the Pause Function you can temporarily freeze (park) entire fixtures or just individual parameters of fixtures. After the activation of the Pause Function, no further changes will be output by the console. But you can still change and store fixtures or single functions internally. Output is shown in the STAGE -window, but not on the real stage.
You can park single fixtures with all parameters. Parked fixtures are displayed by a blue bar on the side of the name and all functions.

- Press PAUSE key 1x (LED is on).
- Click on fixture or fixture key in the Group Window or click on fixture in the Fixture Sheet.





You can also park single parameters of the fixtures. Parked parameters are displayed by a blue bar on the side of the name and all functions.

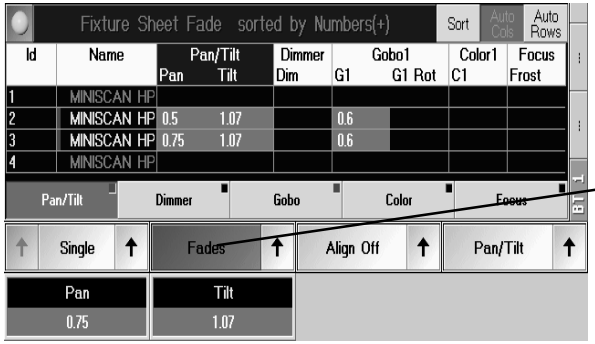
- Press PAUSE key 1x (LED is on).
- Click on the functions in the Preset Control Bar (Switch on Preset Control Bar. **3.4.8** Options in the Fixture Window) or directly on the parameters in the Fixture Sheet.

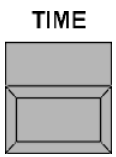
Parked fixtures, functions or parameters can be released again either individually or together.

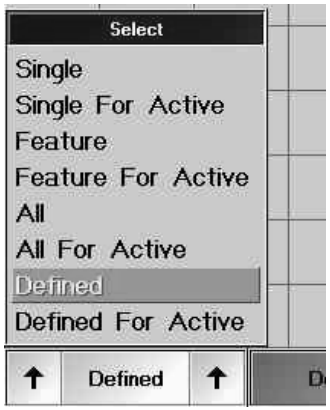
- Press GO+ key 1x (LED is on).
- Click on fixture or fixture key in the Group window or click on fixture in the Fixture Sheet.

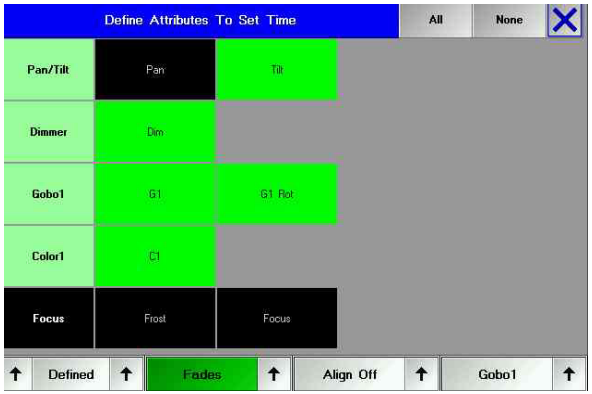
or:

- Click on the functions within the Preset Control Bar or directly on the parameters in the Fixture Sheet.









3.4.3 FADE and DELAY times in the FIXTURE window

Additionally to the standard (Basic) FADE and DELAY times, individual durations can also be set for the individual parameters in the FIXTURE window.
You will need these settings when creating Cues, in order to be able to work with different FADE or DELAY times for individual parameters.

- Press the Values/Fades/Delays key as displayed above in the „Fades“ picture.

oder:

- When you press the TIME key once, the fixture sheet will switch to **FADE** time mode**.
- . The second time, the fixture sheet will switch to DELAY time mode.**.

If in the windows options Automatic has not been selected, the display will not switch over. The currently selected FADE or DELAY function will be displayed only for the Encoder labels. **3.4.8** Options in the Fixture window
Choose a function, where you wish to program a time, other than the Basic time.
Now you can modify the IND. FADE time or IND. DELAY time (individual Fade/Delay Times) for the selected fixtures using the encoders. While modifying, you can use different options.

Choosing options:

Above the left Encoder, a second additional button with the currently chosen option will be displayed.
By pressing this button, you can select the respective next option.

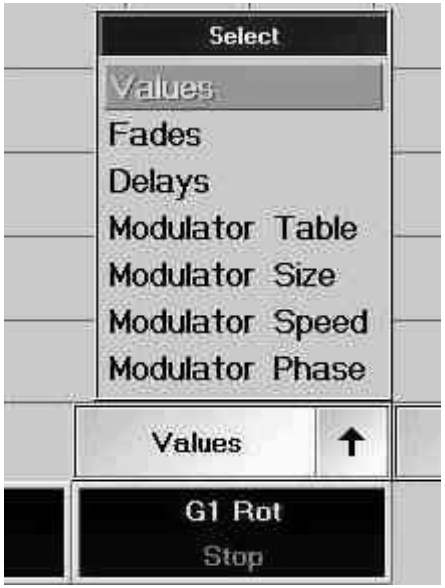
Or:

By pressing the right arrow, a menu will open, in which all options are displayed and can be chosen directly.

- Single (For Active): The time can be adjusted for each individual Function (Attribute). If “Single For Active“ is chosen, only times for activated values can be changed.
- Feature (For Active): The time can be adjusted for the chosen Feature (e.g.: Gobo1, containing e.g.: Gobo1 and Gobo1 Rotation). If “Feature For Active“ is chosen, only times for activated values can be changed.
- All (For Active): All times for all Attributes are adjusted. If “All For Active“ is chosen, only times for activated values can be changed.
- Defined (For Active): The time can be adjusted for the fixed Attributes. Pressing the left arrow on the side of the Defined button will open the “Define Attributes to Set Time“ menu.

Selecting individual Attributes:

In this menu, all Attributes are displayed with a green (selected) or black (deselected) background. Pressing on one of the functions will select or deselect it, respectively.



3.4.4 Modulator values in the Fixtures window

The 4 modulator columns of the respective features show the values on which the effects are based – the column having a violet background. The values will be inserted automatically when an effect is transferred to the modulators using the TOP command. You can, however, enter values directly into the modulator columns. . **6.8**

- ***Modulator Table;*** here you find the entered functions, e.g. SIN, SWING, etc.
- ***Modulator Size;*** here you find the entered size of a function, ranging from -200 to 200
- ***Modulator Speed:*** here you find the entered function speed
- ***Modulator Phase:*** here you find the entered angle to shift the effect

The TOP - button in combination with a target, will synchronize the effect modulators.

GOBO1
Input range [0.00 to 100.00]
"OPEN"
7 8 9 / ESC BS DEL
4 5 6 * CLR POS1 END
1 2 3 - % <- ->
0 . TO + = OK
Clear Deactivate Open Gobo1
Gobo2 Gobo3 Gobo4

3.4.5 Deactivating values individually (Knock out)

Before storing, it is possible to select which parameters of which fixtures are to be stored. Values that are to be stored are indicated by a red background or by red numbers.
By default, parameters within functions are partly activated together. **2.4.2.** Encoder (Activation) Grouping
In order to split the activation for a function, press Edit key and touch on the **set activation** (red background) **before storing** it.

- press EDIT
- choose function in Fixture Sheet

This will open the **input** window.
The title bar will display the chosen function (Attribute).
- Pressing the Deactivate button will cancel the activation of this function.

3.4.6 FIXTURE OPTION

In the Fixture Sheet, you can adapt different basic settings for each individual Fixture.

- press ***EDIT***
- touch on a Fixture and the FIXTURE OPTION window will open.

The Fixture can be renamed using the keyboard.
Next to Type the type of Fixture is displayed, next to ID: the corresponding number, and next to Patch the start address for this Fixture.

- Pressing the ***PAN NORMAL*** key (display changes to PAN INVERSE) will invert the output of the PAN parameter.
- Pressing the ***TILT NORMA***L key (display changes to TILT INVERSE) will invert the output of the TILT parameter.
- Pressing the ***NO SWAP*** key (display changes to SWAPPED) will swap the output of the PAN and TILT parameters so that the Pan parameter on the console controls the tilt of the fixture and vice versa.
- Pressing the ***WITH MASTER*** key (display changes to NO MASTER will be indicated by a dark blue background), the Dimmer value will be output without regard to the level of the GRANDMASTER.

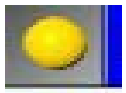
If a Fixture was modified in this window, the Fixture's name will be displayed on a blue background in the Fixture Sheet. These changes can also be set while patching Fixtures. **2.5** Selecting DMX addresses for Fixtures

- With the <<< key, you can switch to the previous Fixture. With the >>> key, you can switch to the next Fixture.
- With the X key, you can close the window. .

3.4.7 AUTO-SORT Function in the FIXTURE Window

Pressing the „Auto Cols" key (dark background) will move the function column, for which the value is currently being changed, automatically to the left.
Selecting Presets **or** functions in the Preset Window (**3.7** Create Presets) will move the respective column in the Fixture Window to the left.

Pressing the „Auto Rows" key (dark background) will move up those fixtures, selected via groups or directly by fixture key and numeric keypad.



3.4.8 SORT Function in the FIXTURE Window

Pressing the SORT key will update the sorting (***siehe*** below) in the Fixture Window.

3.4.9 Options in the FIXTURE Window

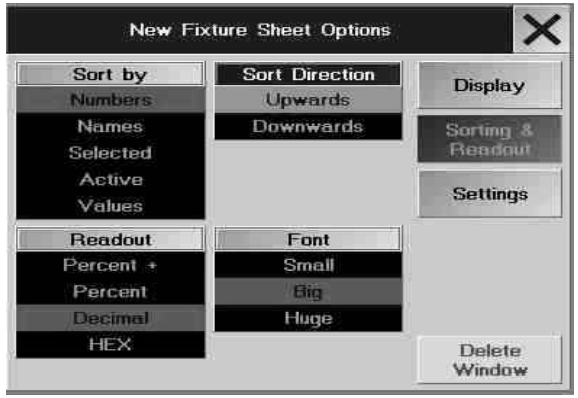
- Touch the touch screen on the left corner of the title bar (yellow dot).

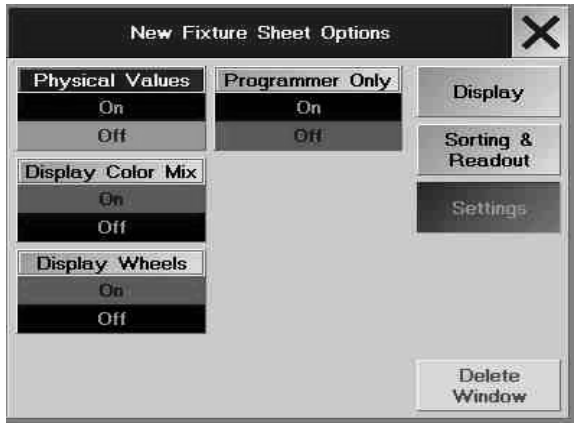
Or:

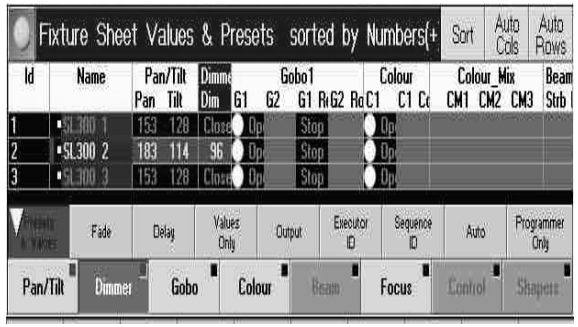
- Right click with the mouse on the headline bar.

The NEW FIXTURE SHEET OPTIONS window will open

If pressing the Sorting & Readout button (displayed with a green font):
Layer Display: By pressing the respective function, the following values will be displayed as basic setting.
- ***Preset and Values:*** The FIXTURE window will show presets or values if no presets are used.







- ***Fades:*** FADE times will be displayed.
- ***Delays***: DELAY times will be displayed.
- ***Values Only***: Only values (without presets) will be displayed, but no effects and profiles.
- ***Output***: The DMX output values will be displayed, but without taking any profiles into account!
- ***Executor ID:*** The Executor's number and page will be displayed.
- ***Cue ID***: The sequence's number and the respective Cue will be displayed.
- ***Automatic***: If this key is pressed, the display will automatically toggle between the different options when toggling with the TIME key.
- ***Layer Contro***l: If "On" is chosen, a control bar appears below the Scanners. By pressing on the individual buttons on the control bar, the display in the window will be switched accordingly.
- ***Preset Control***: If "On" is chosen, a control bar appears below the Scanners. For each function, there is a separate button. By pressing on the individual buttons on the control bar, the appropriate function will be activated and can be modified using the Encoders.

In the right upper corner of each button, you'll find a small square. If this square has a black background, the respective function has not been modified. If the background is red, something has been changed in this function.

If pressing the Sorting & Readout button (displayed with a green font):

Sort by:

With the respective key, you can determine according to which criteria the fixtures within the column are to be sorted.

- ***Numbers***: Fixtures will be sorted by numbers in the FIXTURE window.
- ***Names***: Fixtures will be sorted by name.
- ***Selected***: The **selected** Fixtures will be moved upwards.
- ***Active***: Fixtures for which a value is **activated**, will be moved upwards.

Sort Directions:

- ***Values***: Fixtures will be sorted according to highest dimmer value.
- ***Sort Upwards:*** Sorting by ascending values.
- ***Sort Downwards:*** Sorting by descending values.

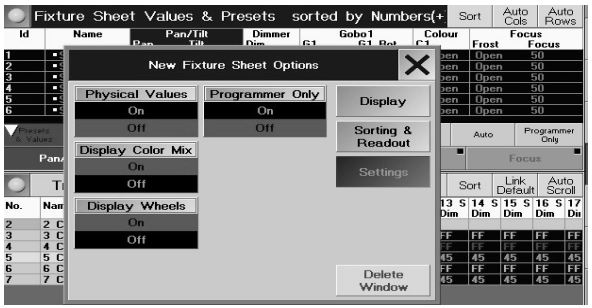
-***READOUT***: Pressing this function, you can switch between the following display options.

- ***Percent:*** Values will be displayed as percentages.
- ***Percent +***: Values will be displayed as percentage values; interim values will be displayed next to the figure in form of 3 dots.
- ***Decimal***: Values will be displayed as decimal numbers (0–255).
- ***HEX***: Values will be displayed as hexadecimal numbers (0–FF).
- ***FONT***: By pressing this function, you can switch the font size in the FIXTURE window between Huge (very big), Big and Small.

This window can be deleted by pressing the DELETE WINDOW key.

● Pressing the X key will close the Option Window.

These settings will all be stored when VIEWS are stored (**3.2** Storing VIEWS).



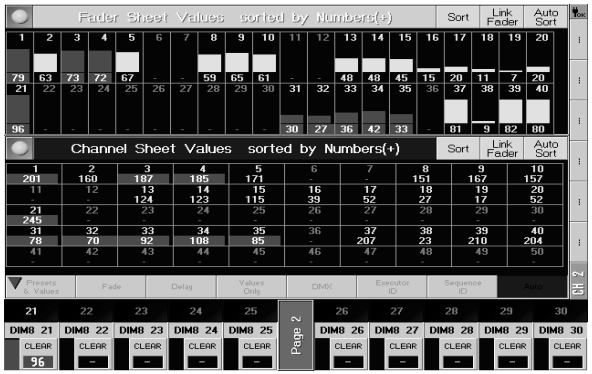
If the Settings button is pressed (displayed with text in green):
Using the respective button, you can display the following items

- Physical Values: in P/T degrees can be displayed
- Display Color Mix: CMY can be displayed
- Display Wheels: Gobos can be displayed
- Programmer only: The Fixture sheet will only show those fixtures and their features, whose values were changed; to change values not displayed, press on the magenta PROGRAMMER ONLY button in the Layer Control bar so that the button turns grey, to display the complete Fixture sheet.

3.5 Accessing Dimmer Channels directly (in the CHANNEL SHEET)

The individual dimmer channels can be accessed directly at any time.
Select the channels, which you wish to modify (selected channels will be displayed in yellow characters).

● Selection:



- Select a dimmer group. **3.3** Creating and calling up Fixtures and Dimmer GROUPS

Or:

- Select dimmers via the CHANNEL key and the numeric keypad. **10** Command Line

Or:

- With Touchscreenn or a left mouse click on the individual channels.

Or:

- Make a left mouse click on the first channel and drag with the mouse holding the left mouse key down (creates a **Loop**), all channels **in this loop** are **selected**.

● Values can be modified

- with the encoders (Encoder assignment is displayed on the screen above) or with the wheel.

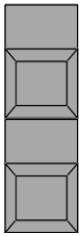
Or:

- By direct entry into the Command Line (AT functions) you can also enter dimmer values. **10** Command Line

Or:

- Select channels with a left mouse click and **hold** middle the mouse key down and drag; the value will be modified

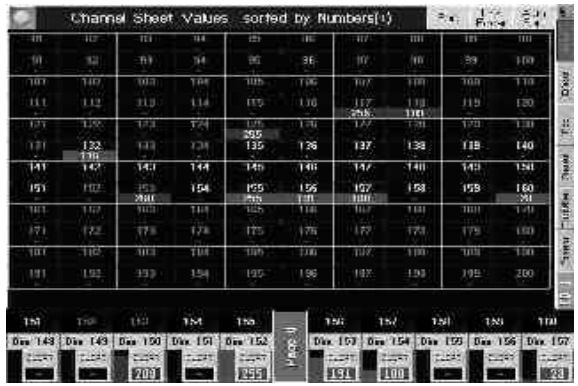
CHANNEL FADER



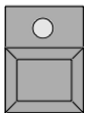
3.5.1CHANNEL Mode

Activate the CHANNEL Mode with the CHANNEL FADER keys this will toggle your executor faders so that they are now channel faders.
The assignment of Channels and Faders can be changed via the CHANNEL FADER keys (for example: 1–20, 21–40, etc.).
The assignment of a channel number to a Fader is listed on the TFT displays above the faders.
By pressing the indiviual CLEAR keys above each fader on the touch screen individual channels, which have been modified manually, can be deselected and deactivated.

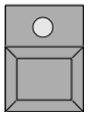
The respective channel can be selected using the physical key above the Fader.
- In the TFT displays above the Faders, the assignment of channel numbers and Faders will be displayed along with any names that have been given to individual channels.
- In CHANNEL mode, the individual channel values can be set with the Faders.
- The respective channel can be hidden using the physical key under the Fader.*



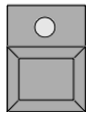
CLEAR



CLEAR

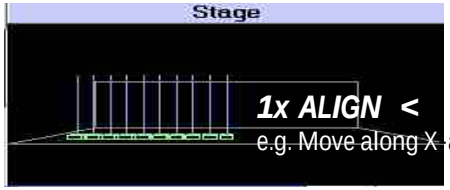


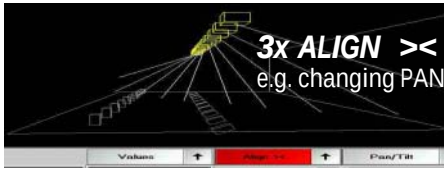
CLEAR



In order to modify the selection **or** the active values of dimmer channels:
● Press the CLEAR key:
When pressing the CLEAR key the **first** time, the selection of dimmer channels will be deselected from the OUTPUT window (yellow characters turn grey).
The **modified** (active) values will be kept and displayed with red background.
● Press the CLEAR key again:
When pressing the CLEAR key the **second** time, the activation of modified values will be canceled (they will no longer have a red background).
● Press the CLEAR key one more time:
When pressing the CLEAR key the **third** time, all modified values will be reset (default or to their original setting prior to the activation).

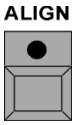
After pressing the CLEAR key for the first time, the yellow LED in this key will flash. This means that only the selection was deleted. When you select other fixtures or dimmer channels now, the yellow LED will no longer flash.





3.4.1The ALIGN Function

The ALIGN function allows you to apply ratios to ranges of parameters. Four different **modes** are available.
ALIGN key pressed once (LED is on).



- ALIGN key pressed once (LED is on).

When changing the activated values, the value of the ***first*** selected Channel/Fixture will be taken as the starting value (will not be changed), while the value of the last selected Channel/Fixture value will be the one modified most, and all values in between will be distributed evenly.

- ALIGN key pressed twice (LED is on).

When changing the activated values, the value of the ***last*** selected Channel/Fixture will be taken as the starting value (will not be changed), while the value of the first selected Channel/Fixture will be the one modified most, and all values in between will be distributed evenly.

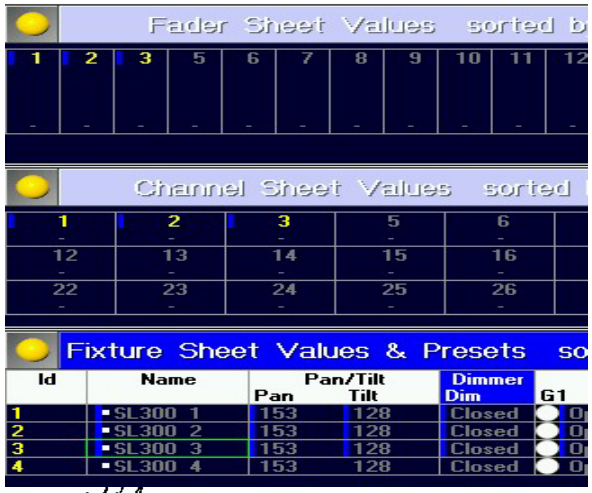
- ALIGN key pressed 3 times (LED is on).

When changing the activated values, the value of the selected Channel/Fixture(s) ***"in the middle"*** will be taken as the starting value (will not be changed). The value of the ***first*** and ***last*** selected Channel/Fixture will be the ones modified most, and all values in between will be distributed evenly.

- ALIGN key pressed 4 times (LED is on).

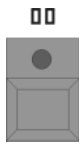
When changing the activated values, the ***middle*** value will be the one modified most, the values of the ***first*** and ***last*** will not change, and the values in between will be distributed evenly.

Order of selection is important; the first and the last selected lamps are also the first and last value in alignement

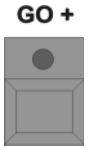


3.5.3 PAUSE Function

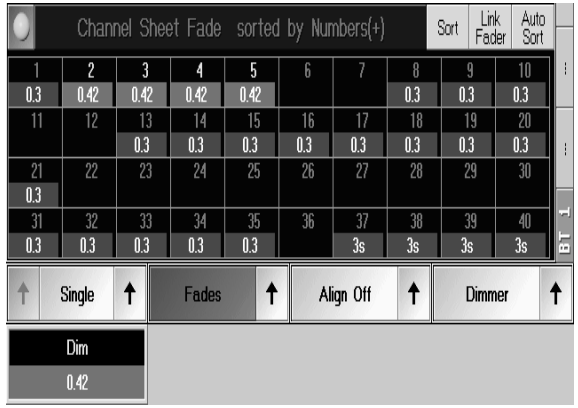
With the Pause Function you can temporarily freeze (park) dimmer channels•. After the activation of the Pause Function, no further changes will be output by the console - only the original value will be kept and be output . But you can still change and store dimmer channels internally.



- Press PAUSE key 1x (LED is on).
- Click on Dimmer key in the Group Window or click on dimmer channels in the Channel or Fader Sheet. Parked dimmer channels will be displayed with a blue bar.Parked dimmer channels can also be released either entirely or separately.



- Press GO+ key 1x (LED is on).
- Click on dimmer key in the Group window or click on dimmer channels in the Channel or Fader Sheet.



3.5.4 FADE and DELAY times in the CHANNEL window

In addition to the standard (basic) FADE times, individual durations can also be set for the individual functions in the CHANNEL window (not in the FADER CHANNEL window).
These settings are needed when creating Cues, so that you can work with different FADE or DELAY times for individual channels.

- Open CHANNEL Window
- Press Values, so that the button displays Fades or Delays.

Or:

When pressing the TIME key once, this will switch the channel sheet to the **FADE** time mode. The second time, this will switch the channel sheet to the DELAY time mode.
If in the Window options Automatic was not selected, the display will not switch over. The currently selected function of the FADE or DELAY Command Line will be displayed only for the Encoder labels. **3.5.7** Options within the CHANNEL window
Now you can modify the IND. FADE or IND. DELAY time for the selected dimmer channels using the left encoder (Individual Fade/Delay Time).

When carrying out modifications, different options can be used. These options can be necessary when times for Scanners and Dimmers are changed simultaneously.

Selecting options:

Above the left decoder, a second additional button will be displayed showing the currently selected option.
By pressing this button, you can select the next option available.

Or:

Pressing on the right arrow will open a menu, in which all options are displayed and can be selected directly.

- ***Single (For Active):*** The time can be adjusted for each individual Function (Attribute). If “Single For Active“ is chosen, only times for activated values can be changed.
- ***Feature (For Active):*** The time can be adjusted for the chosen Feature (e.g.: Gobo1, containing e.g.: Gobo1 and Gobo1 Rotation). If “Feature For Active“ is chosen, only times for activated values can be changed.
- ***All (For Active):*** All times for all Attributes are adjusted. If “All For Active“ is chosen, only times for activated values can be changed.
- ***Defined (For Active):*** The time can be adjusted for the fixed Attributes. Pressing the left arrow on the side of the Defined button will open the “Define Attributes to Set Time“ menu.

Selecting individual Attributes:

In this menu, all Attributes are displayed with a green (selected) or black (deselected) background. Pressing on one of the functions will select or deselect it, respectively.

3.5.5 Link Fader-Function in the CHANNEL window

If the Link Fader function is activated, paging through in CHANNEL Mode will keep the current fader range in the Channel / Fader sheet

3.5.6 AUTO-SORT-Function in the CHANNEL window

If the AUTO-SORT-function is activated (key has a black background), the selected channels in the CHANNEL window will automatically be moved to the left and upwards.
Using AUTO-SORT in conjunction with Link-Fader allows channel selections to be transferred to the faders when in channel mode (CHANNEL mode).

3.5.7 Options within the CHANNEL or Fader window

Touch the touch screen on the left corner of the title bar (yellow dot).
Or:
With a right mouse click on top line the CHANNEL SHEET OPTIONS window will open.

The Channel or Fader Sheet Options window will open.
The Display button must be pressed (displayed with green font).

Layer Display (only Values and Outputs in the FADER CHANNEL window possible):
By pressing the respective keys, the following basic values will be displayed:
- ***Values only:*** Values are displayed.
- ***Fades***: FADE times will be displayed.
- ***Delays***: DELAY times will be displayed.
- ***Output***: The DMX output values are displayed.
- ***Executor ID***: The Executor's number and page are displayed (only valid for Executor keys).
- ***Cue ID:*** The Sequence's number and respective Cue are displayed (only valid for Executor keys).
- ***Automatic***: If this key is pressed, the display will automatically swap in this window when using the TIME key.
- ***Layer Control***: If "On" is chosen, a control bar appears below the Scanners. By pressing on the individual buttons on the control bar, the display in the window will be switched accordingly.
- ***Preset Control:*** If "On" is chosen, a control bar appears below the Scanners. For each function, there is a separate button. By pressing on the individual buttons on the control bar, the appropriate function will be activated and can be modified using the Encoders.

In the right upper corner of each button, you'll find a small square. If this square has a black background, the respective function has not been modified. If the background is red, something has been changed in this function.
The Sorting & Readout button must be pressed (displayed with a green font).

Sort by:
With the respective key, you can define the channels' sorting order in the window.
- ***Numbers***: Within the CHANNEL window channels are sorted by numbers.
- ***Names***: Channels will be sorted by name.
- ***Selected***: The **selected** channels will be moved to left/above.
- ***Active***: Channels for which a value is **activated**, will be moved upwards.
- ***Values***: Channels will be sorted by highest value.

Sort Direction:
- ***Sort Upwards:*** Sorting by ascending numbers.
- ***Sort Downwards:*** Sorting by descending numbers.

Readout:
By pressing this function, you can choose the display criteria for the values.
- ***Percent:*** Values will be displayed as percentages.
- P***ercent+:*** Values will be given as percentage values; interim values will be displayed next to the figure inform of dots.
- ***Decimal:*** Values will be given as decimal numbers (0–255).
- ***HEX:*** Values will be given as hexadecimal numbers (0–FF).

Font: By pressing the function, you can switch the font size in the Channel or Fader window between Huge (very big), Big and Small. The Settings button must be pressed (displayed with a green font).
Orientation: By pressing this function, you can choose between sorting the channels from left to right or from top to bottom.
Wrap Around: If "On" has been selected, the size of the Channels will be adjusted automatically, when the number of Channels changes.
Namefield: If "On" has been selected, the Channel names are displayed.
Column: The figure indicates, how many channels will be displayed in one column. Clicking on that figure, you can enter a new number via keyboard; confirm with ENTER. The new number will automatically be taken over.
The Channel window can be deleted by pressing the Delete Window key.

● By pressing the X key, the Option window will be closed.

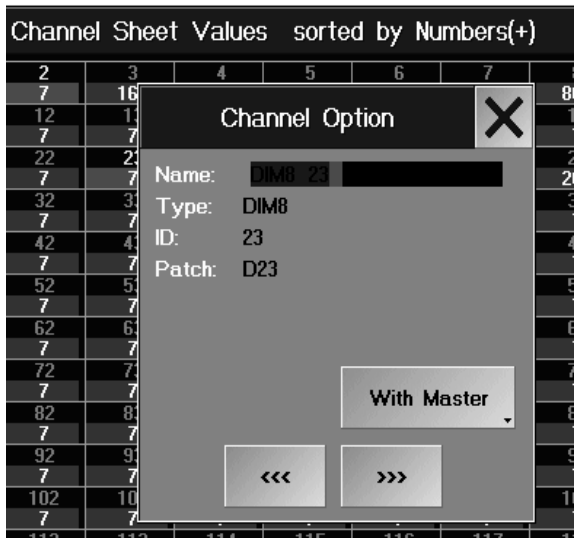
All these settings (excl. "LINK") will be stored when storing the VIEWS (***3.2*** Storing VIEWS).

3.5.8 DIMMER OPTION

In the Channel Sheet, you can adapt different basic settings for each individual Dimmer channel.

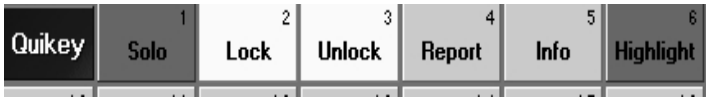
● Press Edit key and choose the channel on the Touchscreen.

The CHANNEL OPTION window will open.



The Dimmer channel can be renamed using the keyboard.
Next to 'Type' the type of Dimmer is displayed, next to 'ID' the corresponding number, and next to 'Patch' the DMX address for this Channel.
Pressing the WITH MASTER key (display changes to NO MASTER, will be indicated by a dark blue background), the Dimmer channel will be output without regard to the GRANDMASTER.
If a Dimmer channel was modified in this window, the Dimmer channel's number or name will be displayed on a blue background in the Channel Sheet.
These modifications can also be defined while patching Dimmer channels. **2.2.2** Selecting DMX addresses for Dimmers
With the <<< key, you can switch to the previous Dimmer channel. With the >>> key, you can switch to the next Dimmer channel.

● With the X key, you can close the window.



3.6 SOLO function

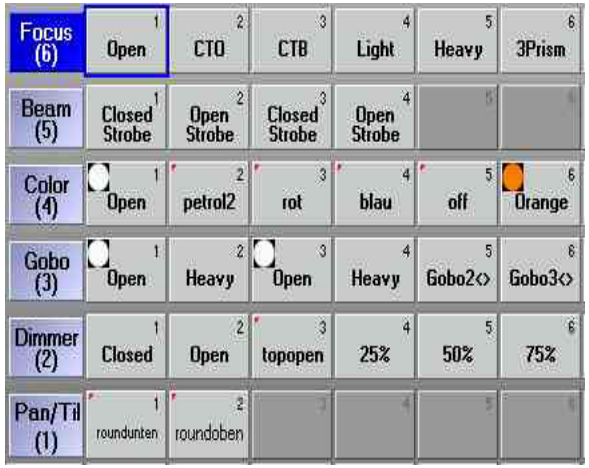
The SOLO function is, so to say, the counterpart of the Highlight function. SOLO will bring all dimmers not selected to a vlaue of 0. I.e. sequences, effects etc. will still run, but are no longer visible. This does not apply to Fixtures that had activated the NO MASTER function in SETUP / FIXTURE PATCH, and whose dimmer values will not be modified. The SOLO function can be activated as Quikey (see 9.2) or by using the HIGHLIGHT hardkey.
In SETUP / DEFAULTS, set the Button to HIGHLIGHT IS SOLO;
The Hardkey will then have the SOLO function (LED is on) or no function at all (LED is off). The HIGHLIGHT Quikey will then also behave like the HIGHLIGHT hardkey.
If the Button is on HIGHLIGHT NORMAL, the Highlight Hardkey will execute its normal function, and the SOLO function can only be activated using the Quikey

3.7 Creating and calling up Presets

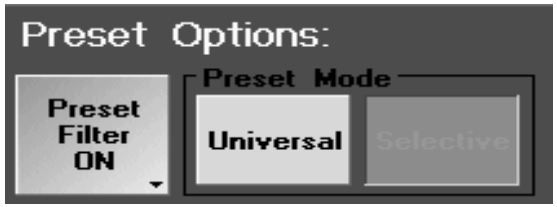
There are certain values for the functions of fixtures, which will be needed again and again, for example the values for individual colours of the color wheel. These values can be programmed as presets in the respective PRESET window and then be reselected.
If you have presets for the fixtures be created automatically (CREATE PRESETS), these pre-recorded presets will be available in the respective windows. **2.11 Creating Presets automatically**

- Create a window for all presets you want to use - select them from preset-pools.
- In the GROUP window, select those fixtures, for which you want to create a Preset, by a touch or mouse click (fixtures have to be displayed in yellow in the FIXTURE window).
- Select the Preset group for which you want to create a Preset on the display, using the Touchscreen or by a left mouse click on the title bar. For example: In the Preset window PAN/TILT.

Values and positions can be changed by:
- Encoders (all functions and the assignment will be displayed on the right display above the encoders),
- Trackball (only PAN /TILT), if activated,
- Level Wheel (only for dimmer values),
- Middle mouse key (left click on a value in the FIXTURE or CHANNEL window; drag the mouse while holding the middle mouse key will change the value).
- Switch on the Trackball by pressing the TRACKBALL ON button (the integrated LED must be on). Now you can control the selected fixtures via the trackball (PAN/TILT) . Changed (active) values will be displayed in the OUTPUT window by a red background colour.

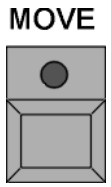


Pictures of the gobos are displayed only if they are stored in library.



There are two types of Presets:
- Selective: Can only be used for those Scanners, for which it was saved. Will be indicated by a red triangle in the left upper corner of the saved Preset button.
- Universal: Can be used for all Scanners of the **same** type, even if not all will be saved.
Additionally you can store presets including several functions on one key. These presets can be created in any preset group. Preset Filter ON: only the functions (Attributes) of this Preset group will be stored into this preset; with Preset Filter OFF, all currently active functions will be stored into this Preset.
- While **holding down** the STORE key, make a preselection by pressing the appropriate button (Universal, Selective, Preset Filter ON or OFF).
- Release STORE key (STORE LED comes on). Select the required location in the PAN/TILT window on the display by a simple touch or with left click of the mouse. These Pan & Tilt values are now stored in **this** location (STORE LED is off).

- Enter a name for the preset using the keyboard: confirm with ENTER.
If you want to store more presets for the same fixtures and functions, start again with step **3** (***3.7.5 Update Preset***).



3.7.1 Moving Preset Keys within the Window

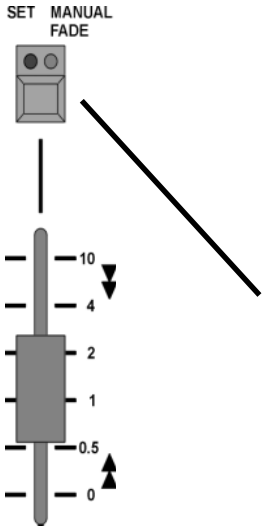
- Press MOVE key 1x (LED comes on).
- Activate the key in the respective window by either using the touchscreen or a left mouse click on the key and drag (a hand symbol appears) to the required location within this window.

You can also insert preset keys.

- Press MOVE key 2x (LED flashes).
- Activate the key in the respective preset window using the touchscreen or make a left mouse click and drag (hand symbol appears) to the desired location between two other keys. The following keys will all be moved by one position to the right.

3.7.2 Copying Presets

- Press the COPY key once (LED is on).
- Select the Preset Keys in the respective PRESET Window. By selecting mulitple presets, several presets can be copied at the same time.
- Press the AT key 1x (LED is on).
- Click on the destination for the copied presets in the PRESET Window.
- Press the ENTER key once.

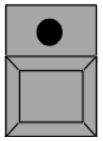


3.7.3 Selecting Presets

- Select the Fixtures or Dimmers, for which you want to call up a preset (Fixtures/Dimmers have to be displayed in yellow). Now, the individual presets can be called up for the selected Fixtures. The called-up presets and their names will be displayed in the FIXTURE windows.

If you select a preset directly, without having selected Fixtures or Dimmer channels, all Fixtures and Dimmers, for which presets had been created, will be selected. The preset can now be called up by pressing the respective key.
Using the Fader next to the right display, you can either define Preset Fade times or fade over presets manually.
Press the key above the Fader once (red LED is on). Select the desired Fade time using the Fader. The selected Fade time will be used when presets are being called up.
Press the key above the Fader once more (green LED is on). Select your Presets. With the Fader, you can now fade over towards the selected Preset. Default setting for the Fader to fade just upwards or in both directions **2.13** Settings in the DEFAULTS menu below the Executor Defaults Crossfade.

FREEZE

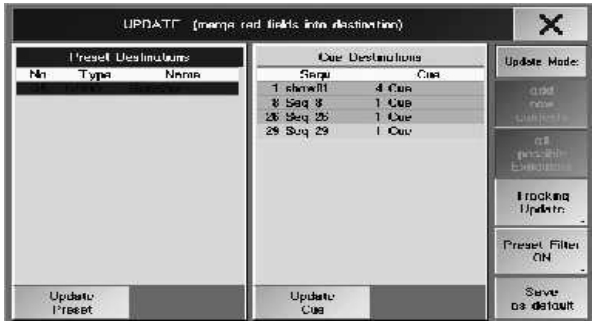


3.7.4 FREEZE Function

By activating the FREEZE function, called-up Presets can be locked. As long as the FREEZE Function is switched on, the called-up preset can not be overwritten by any Cues, Sequences or Chasers.

- Press the FREEZE key once (LED is on).
- Select a Preset – the selected Preset will be activated and can no longer be modified by Cues, Sequences or Chasers.

In order to deactivate the FREEZE function, press the FREEZE key once more (LED is off).



3.7.5 Update Preset

In order to change presets

- Press the EDIT key (LED is on).
- Click on or touch one of the Preset Keys (the LED will blink, the preset key will display EDIT). The used fixtures/ channels are being selected and the values will be activated.
- Make your required modifications.
- Press the UPDATE key.

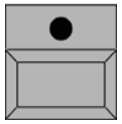
A window appears, where you can either store the preset by pressing the OK key or cancel the modification by pressing CANCEL.

If you want to change more than one preset, you can select another preset by pressing the EDIT key right after the modification, followed by the NEXT key. Before the activation of the new selected preset, a window will open, where you can store the 1st preset by pressing the OK key or where you can cancel the modification by pressing CANCEL. The second preset can only be activated after this.

Or:

When executing sequences you can modify and store single values of presets directly.

EDIT



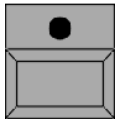
- Play back a cue, in which presets are to be modified. Now you can modify this cue by direct access (the UP-DATE key LED is on). **3.4** Accessing fixtures directly / **3.5** Accessing Dimmer Channels directly

Press the Update key once.

The UPDATE window will open.

By pressing this key, you can toggle between “only original contents“ and “add new contents“.

UPDATE

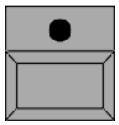


- ***Only original contents***: Upon updating the preset, only the changes on fixtures/channels which have already been used in this preset will be stored.
- ***Add new contents***: Upon updating the preset, all changes will be stored regardless at to whether those fixtures/channels have already been used in this preset.

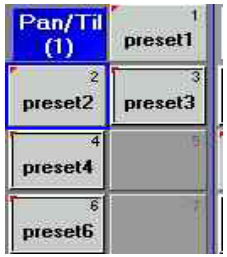
Pressing the “Update Preset“ key will update that preset being displayed with a blue background. You can select another preset using the encoder.

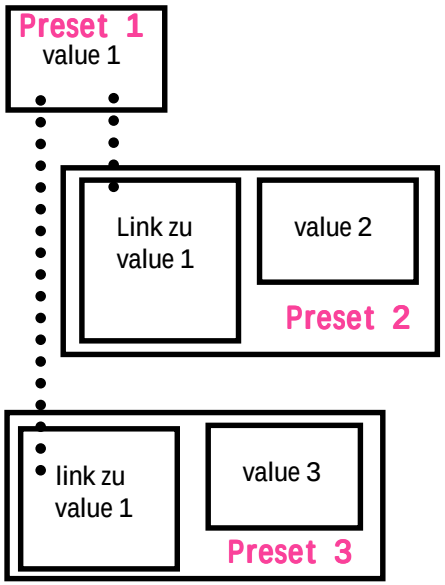
Pressing the “Update All Presets“ key will update all presets listed in the chart.

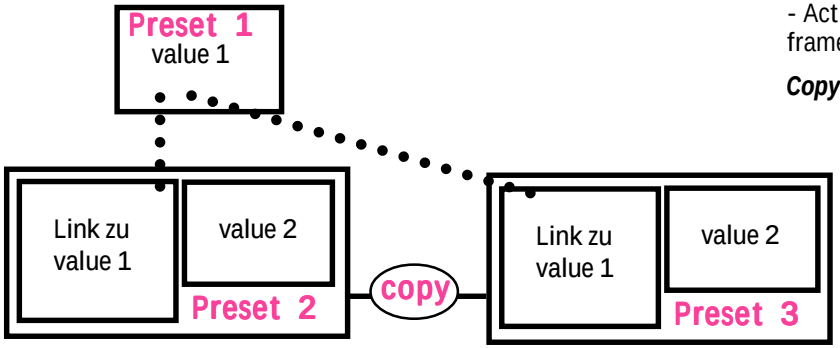
UPDATE



Pressing the Save as default key will store all (pre)- settings as default (e.g.: Only original contents oder Add new contents). These settings will be ready the next time you open the Update menu.







3.7.6 Embedded Presets

With this function, you can „embed“ preset values into other presets, so you can quickly change multiple presets. As the embedded value is nothing but a link to the original preset, all changes of the original preset will be contained in all those presets containing this link. All Embedded Presets, as well as all presets having a link to another preset, can be distinguished by a black frame in the Preset Sheet.

Creating an Embedded Preset:

- call up a preset
- adjust additional values or positions
- use STORE to save the new preset to an empty button in the Preset Pool – mind the preset filter setting. The black frame around the new preset indicates an Embedded Preset.

Example:

- activate Preset 1 and save it with an additional value as Preset 2. In the Preset Pool, Preset 2 will be displayed with a black frame indicating an Embedded Preset. Create Preset 3 in the same way. If you change Preset 1, this will automatically change Presets 2 and 3.

Editing an Embedded Preset:

- press ***EDIT***
- call up a preset – in the Fixture Sheet, all Embedded Presets will now be displayed with a black frame
- make your changes
- press ***UPDATE*** and confirm with ***OK***

If you change the values of all Embedded Presets, they will become a „normal“ preset after an update. If an Embedded Preset or a part of an Embedded Preset (e.g. only the PAN channel) is kept, the character of the Embedded Preset will also be kept.

Preventing changes by previous Presets:

- call up the Embedded Preset
- press ***STORE*** (red LED is on)
- press the button of the Preset and confirm with OVERWRITE

The black frame around the Preset will vanish and the link to the Embedded Preset will be cancelled.

Example:

- Activate and save Preset 3. The link to value 1 will be cancelled, value 1 will be entered in Preset 4 (the black frame in the Preset Pool will vanish). If you now change Preset 1, Preset 3 will remain unchanged.

Copying an Embedded Preset:

- press ***COPY***
- press on the Preset
- press on a free button, to which the Preset is to be copied

Example:

- ***COPY***
- press on Preset 2
- press on a free button and rename the new preset to Preset 3

Important: The link to Preset 1 will be kept in Preset 3, even if you delete Preset 2 after the copying process (see graphics on the left).

Working with Command Line:

- press ***DELETE***
- pres button Preset / Page / Group / View / Executor or select Sequenz
- type in number on the numeric block (e.g. 1.16 for Executor 16 on Page 1)
- confirm with ***ENTER***

writings in red are not possible; if no page number is typed the elements of the current page will be deleted

3.8 Deleting Groups, Sequences, Views etc.**

For all following Deletions, the DELETE key has to be pressed in advance (LED is on).

Deleting Groups:
Select the respective Group by touch or left mouse click.
or:
Press the GROUP key. Enter a Group number using the numeric keypad and confirm with ENTER.

Deleting Presets:
Select Preset in the respective window by touch or left mouse click.
or:
Press the PRESET key. Enter a Preset Function number (e.g.: 3 for Gobo) followed by „.“ and the Preset number; confirm with ENTER.

Deleting VIEW Assignments: Select a VIEW with the VIEW key on the side of the numeric keypad, via the Touchscreen or a left mouse click.

Deleting a VIEW: Press the VIEW key (LED is on). The SELECT VIEW window appears; now select the window to be deleted. The VIEW Name will be maintained, but without any contents. All assignments to VIEW keys are now deleted.

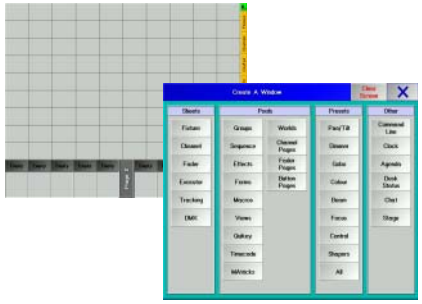
Deleting a MACRO: Press the MACRO key (LED is on). The SELECT MACRO window appears; now select the macro to be deleted. The MACRO Name will be maintained, but witout any contents. All assignments to MACRO keys are now deleted.

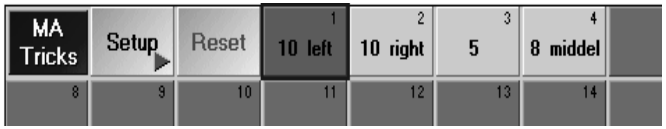
Deleting an EXECUTOR: Press the desired EXECUTOR key.
or:
Deleting the EXECUTOR on the **current** page:
– Press the EXECUTOR button next to the numeric keypad (LED is on). Enter the EXECUTOR number via the numeric keypad and confirm with ENTER.
Deleting the EXECUTOR on **another** page:
– Press the EXECUTOR button next to the numeric keypad (LED is on). Now, enter the PAGE number.
Then, press the full stop key and the number of the EXECUTOR and confirm with ENTER.
Example: EXECUTOR 5 on PAGE 3 is to be deleted:
Entry: [DELETE key] [EXECUTOR button] [3] [.] [5] [ENTER]
Or:
– Press the EXECUTOR button next to the numeric keypad (LED is on). Enter the EXECUTOR number via the numeric keypad.
– Press the PAGE key next to the numeric keypad (LED is on). Enter the PAGE number via the numeric keypad and confirm with ENTER.

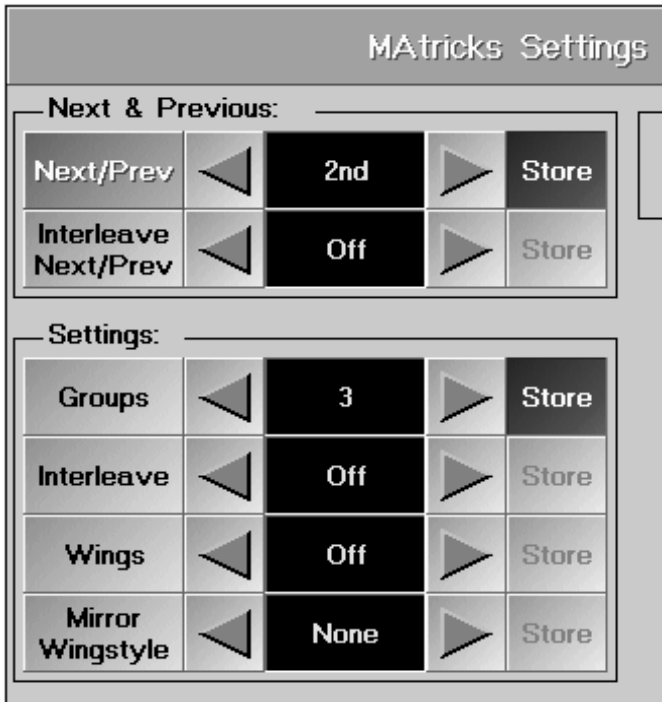
Deleting Sequences: Press the SEQUENCE key. Enter the number of Sequence via the numeric keypad and confirm with ENTER.

Deleting CUES: Press the SEQUENCE key. Enter the number of Sequence via the numeric keypad. Press the CUE key and enter the cue number via numeric keypad; confirm with ENTER.
If no sequence number is entered, the Cue of the Master (default) sequence is deleted.

Deleting a PAGE: Press the PAGE key next to the numeric keypad. Enter the PAGE number via the numeric keypad and confirm with ENTER. The complete PAGE with all EXECUTOR faders and buttons is deleted.







3.9 MAtricks

3.9.1 Intelligent Selecting

Here, you can create, store and directly call up different Selection groups.
Find out, what the different combinations and the resulting options can be used for, by simply trying them out. The listing of the individual functions will only contain and explain a few of the many options.
Proceed as follows:
In order to reate groups:

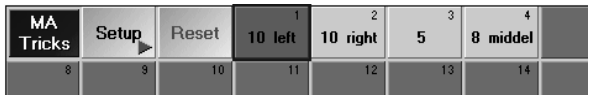
- open the MAtricks SETUP
- choose function and value (STORE button lights green)
- press STORE (LED lightsred)
- press empty button in MAtrickspool and insert name

In order to apply groups:

- select lamps (the order of selection is the same order the Next / Prev. - buttons are working)
- press button (in MATricksPool)
- press NEXT / PREV. to select lamps and set values

In the Matrix pool, press the “SETUP“ button.
The “MAtricks Settings“ menu will open.
Next/Prev: Move individual or several selected fixtures within the whole selection.
E.g. select fixtures. When pressing the “Next/Prev < “ or “ > “ key for the first time, the first/last fixture remains selected. When pressing the key once more, the next will be selected, and so forth. This function can also be operated by using the NEXT/PREV keys.
Groups: Here, you can define the number of fixtures that are to be moved simultaneously within the selection.
E.g. Press the “Groups > “ key, until a „3“ appears. Now, each time you press the “Next“ key, the next 3 fixtures of the whole selection will always be selected.
Interleave: To divide the whole selection into groups.
e.g.: If you select a 3 under „Interleave“, the next 6 fixtures (3 groups of 3 fixtures each) will be skipped, when pressing the “Next“ key.
To select the skipped fixtures, you can choose individual groups. If you had entered a value under “Interleave“, 1st will be displayed for the first group on the right of “Interleave Next/Prev“. Using the “ < “ or “ > “ keys, you can switch over to the next group. When moving the selection, the other fixtures will now be selected.
or:
Interleave Next/Prev: E.g.: You want to select each fifth fixture of the whole selection and move this subselection.
Next/Prev must be „Off“. Switch it off by shortly pressing into the center of “Next/Prev“ to “ < 2nd > “. The display will switch to “Off“.
Then, press “ > “ under “Settings“ next to “Interleave“, until a 5 appears. Now, you have selected only the first, sixth, eleventh, ... fixture.
By shortly pressing “ < or > “ next to „Interleave Next/Prev“, you can move the selection by one position up or down.
If you want to move several fixtures simultaneously, you can define this under “Groups“.

MA LIGHTING
MA Lighting Technology GmbH · Dachdeckerstr. 16 · D-97297 Waldbüttelbrunn · www.malighting.de eMail: info@malighting.de



Additionally:
Wings: Allows you to split and mirror the whole selection.
E.g.: When you have a setting of 2, the complete selection of fixtures will be split in the middle. The set selection will now be executed in the first half from the first fixture to the middle, and in the second half from the last fixture backwards to the middle.

3.9.2 Mirroring when Entering Pan/Tilt values

Mirror Wingstyle: When entereing values for PAN/TILT, these can be mirrored individually or together.
E.g.: Take 10 Scanners (mounted in a row from left to right) and select them 1-10.
Now, set "Wings" on 2 digits and "Mirror Wingstyle" on Pan.
Now, when you modify the „Pan" value, the first 5 Scanners move in one direction and the others into the other one.

3.9.3 Storing settings

The modified settings can be stored individually or together.
In the MAtricks Setup, you'll find a "Store" button next to each function. If a function has been changed, this buttons will automatically be activated (dark green background). By shortly pressing the button, you can switch on (activated) or off (deactivated) the storing function. When storing, only the activated functions will be stored.

- To store, press the STORE key (LED in on).
- Now, choose the desired button in the MAtricks pool. Directly after storing, you can assign a name for the stored setting.
- By cklicking on the button, you can call up the stored setting, and the button will be displayed with a dark green background. You can combine multiple stored settings by calling them up in sequence.
- By pressing the "Reset" button, all settings in the MAtricks Setup will be switched off.

3.9.4 Selective Copying

With the Circular Copy function, you can copy or move set values of fixtures to other fixtures.

Copying values

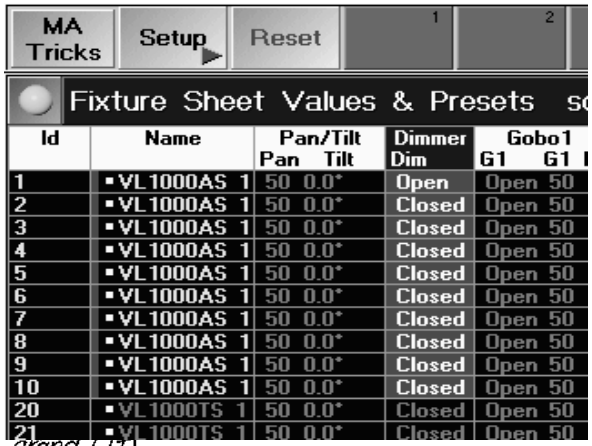
Example:-Select a fixture and set the Dimmer value to 100%.

- Select the fixture and further fixtures.
- By pressing the " > " button, the Dimmer of the fixture that was selected as next one, will be set to 100%.
- With each pressing, the value will be copied to the next, selected fixture. When pressing "<", the value will be copied to the last selected fixture.

Moving values

Example: Select a fixture and set the Dimmer value to 100%.

- Select the fixture and further fixtures, to which you want the Dimmer value to be moved to.
- By pressing 2x on the column title (here Dimmer), you can activate all Dimmer values für the selected fixtures.
- By pressing the " > " button, the Dimmer value of the first fixture will be moved to the next, selected fixture.
- When pressing "<", the value will be copied to the last selected fixture.


MA Tricks
Setup
Reset
1
2
Fixture Sheet Values & Presets
Id
Name
Pan/Tilt
Pan Tilt
Dimmer
Dim
Gobo1
G1 G1
1 ▪VL1000AS 1 50 0.0° Open Open 50
2 ▪VL1000AS 1 50 0.0° Closed Open 50
3 ▪VL1000AS 1 50 0.0° Closed Open 50
4 ▪VL1000AS 1 50 0.0° Closed Open 50
5 ▪VL1000AS 1 50 0.0° Closed Open 50
6 ▪VL1000AS 1 50 0.0° Closed Open 50
7 ▪VL1000AS 1 50 0.0° Closed Open 50
8 ▪VL1000AS 1 50 0.0° Closed Open 50
9 ▪VL1000AS 1 50 0.0° Closed Open 50
10 ▪VL1000AS 1 50 0.0° Closed Open 50
20 ▪VL1000TS 1 50 0.0° Closed Open 50
21 ▪VL1000TS 1 50 0.0° Closed Open 50

Setting Filters, to just copy/move individual Functions

- ***Example:*** You have set different positions for 10 Scanners. Now, you want to just copy/move the “PAN“ value from one fixture to the others.

● Pressing the “Filter“ button will open “AT Filter Option“ menu. In this menu, you’ll find all functions available. The functions are all displayed with a green background. Pressing on a function will deactivate it (will be displayed in black then).

● If you just want to copy/move the “PAN“ value, deactivate “TILT“ and leave the menu by pressing the “X“ key. Now, only the “PAN“ value will be changed, when you copy/move.

3.10 Blind Modus

The Blind mode will separate the stage output from the programmer, i.e. when changing values being in the Blind mode, the values of the stage output will remain as they are. You can program shows without changing the current stage lighting; by simply switching over using the BLIND key you gain a quick access to the stage lights.

● Hold the BLIND key, until you hear the beep and the key LED starts to blink.
The title bar of all Sheets affected by the Blind mode will change from blue to red.

The Blind mode differs as follows from the stage output:
- all other Sheets are available.
- changes in presets can be saved in Blind mode and when switching to stage output, the old value will still be visible.
- changes in SETUP will also be visible in the stage output.
- sequences, effects, groups, etc. that you delete while in Blind mode, will also be deleted in the stage output.
- PDA will show the respective mode without indication whether it is the Blind mode or the stage output.

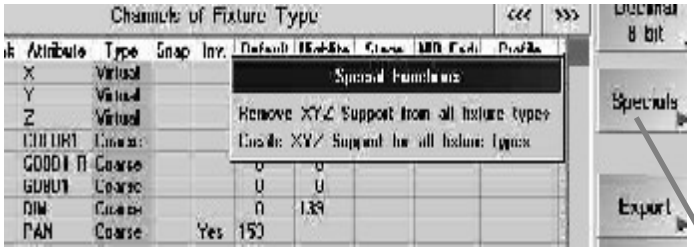
To switch off the Blind mode:
● Hold the BLIND key, until you hear the beep and the key LED goes out.
After switching over, all changes made in Blind mode will immediately be active in the stage output.

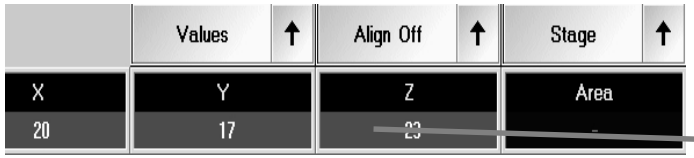
3.11 Stage window with SETUP and FOLLOW modes

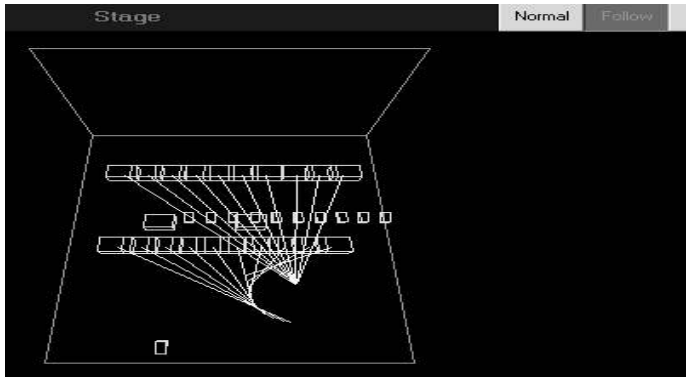
The stage window can be used in the 3 different modes ***NORMAL / FOLLOW / SETUP***:

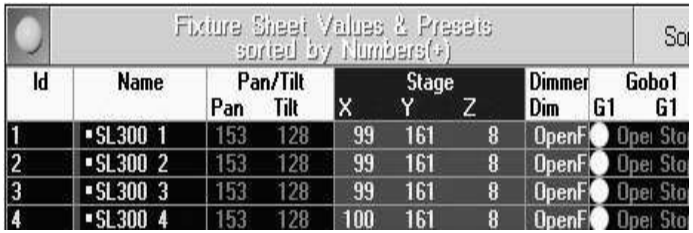
NORMAL mode:
The window will display all fixtures in their stage positions, white lines indicating the direction and intensity of the light. The fixtures can only be selected here.

FOLLOW mode:
In this mode, you can focus individual fixtures or groups having virtual X, Y, and Z axes, on a deliberate point on the stage. These values will always refer to the stage geometry and will be displayed in the STAGE column on the Fixtures Sheet. The resulting PAN/TILT values will be calculated from the fixture position and also be displayed in the Fixtures Sheet. The focus will be kept even if you change the fixture position, and the respective PAN/TILT values will automatically be adapted.









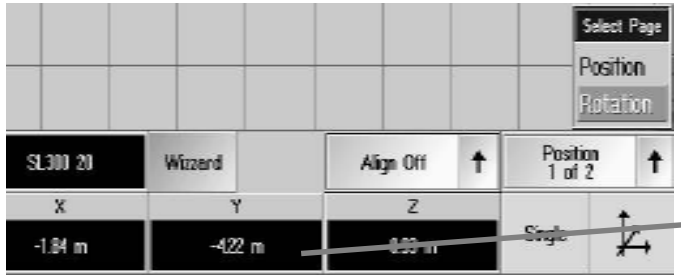
- Enter the virtual axes in SETUP / FIXTURE TYPE / CHANNELS of FIXTURE TYPES using the SPECIALS button SPECIALS
- Select the fixtures in NORMAL mode
- Use the mouse or the touch screen to define the position on the stage floor (the Z value will always jump to 0), or

set the spacial coordinates using the Encoders. (in this version, AREA is not yet assigned.) In the Fixture Sheet, the values will be displayed in a separate column (STAGE X Y Z) and can be set here, too.
The values do always refer to the stage siye (definable in SETUP / FULL ACCESS / SETUP STAGE), 50% of the definable area are always the middle of the stage front edge.
If you create multiple intersections (see graphics on the left), the Encoders will always show the last entered value.

- ***Note regarding DMX / STAGE values: may not be mixed within one Cue or Sequence.***

Effects using the X, Y, and Z parameters:
For creating effects, you can also use the stage parameters X,Y, and Z. They can help you, e.g. to easily create circles as effect outputs. Procedures as given in chapter 6 Effects and Modulators.
NOTE: you have to enter all 3 parameters for the effect, as otherwise, no vector can be created and the effect cannot run. Within an effect, stage values may not be mixed with other features.

- When editing the effect, enter the attributes X, Y, and Y (STAGE) in the PARAMETER column.



SETUP mode:
In this mode, you can position fixtures using mouse, Encoders or touch screen. Changes will automatically be saved to the SETUP menu.

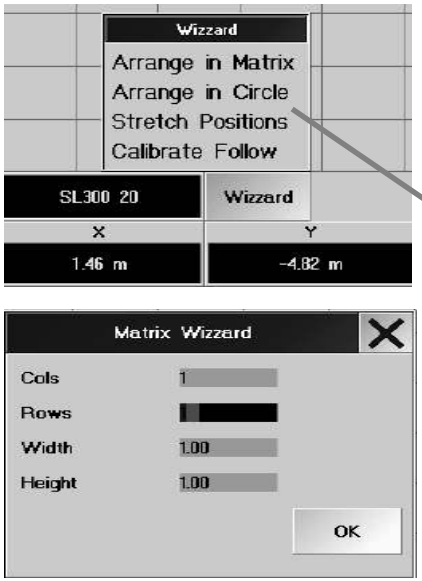
- The SETUP menu may not be opened.
- Open STAGE and choose SETUP mode.
- Select fixtures (usingthe mouse or the touch screen).
- adjust the 3 axes using the Encoder die 3 Achsen verstellen,

or

- modify the X and Y axes usingthe left mouse button; if you hold the left and right mouse button, only the Z axis will be modified.

- X, Y, and Z axes can be modified individually or groupwise (see also 2.2.3)
- after switching from POSITION to ROTATION, you can rotated fixtures individually or groupwise on the X, Y, or Z axis

NOTE: Perform changes preferably using the Encoders, as with the mouse, you run the risk of changing the stage setting just like that. Undo unwanted changes using OOPS (except with MICRO).

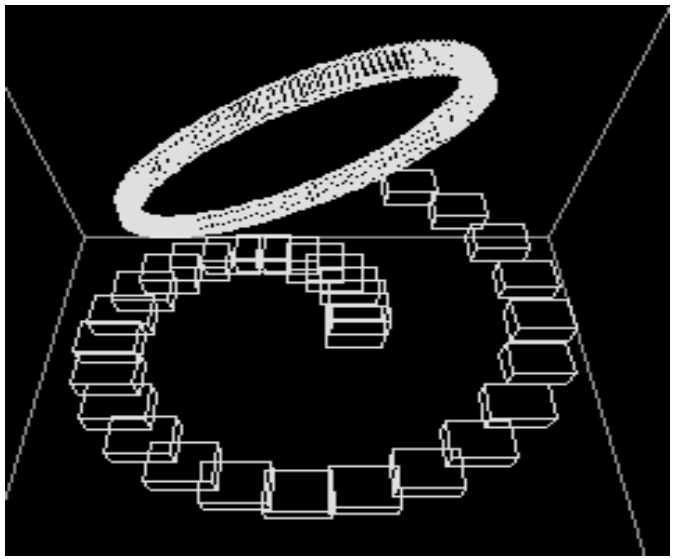


WIZZARD in the SETUP mode:
Here, you can arrange fixtures in geometrical figures (e.g. square, circle, arc). You can, however, position each and every fixture manually (see above), but this function saves you a lot of precious time. A special highlight is the Calibration mode that you can use to transfer the actual fixture position to the console.
The SETUP menu may not be opened.

- Open STAGE and choose SETUP mode.
- Select fixtures (using the mouse or the touch screen) or enter the ID number area.
- In the WIZZARD, choose the desired function.

- ARRANGE IN MATRIX:

- Select those fixtures to be embedded into the matrix (the number should be the sum from horizontal and vertical lines as otherwise no complete square will result)
- Enter the number of horizontal ROWS and vertical COLUMNS;
- Enter the horizontal and vertical distances of the fixtures; the resulting total value may, however, may not exceed the stage size.
- Confirm using the OK button



- use POSITION + to offset the formation on 3 axes, without changing the form itself.

- ***ARRANGE IN CIRCLE:***

- Select fixtures
- Set starting and end angles; between 0 and 360 or more
- Set the starting and finishing radius (if the two radi are unequal, a spiral will be the result, see graphics on the left)

- use POSITION + to offset the formation on 3 axes, without changing the form itself.

- ***STRETCH POSITION:***

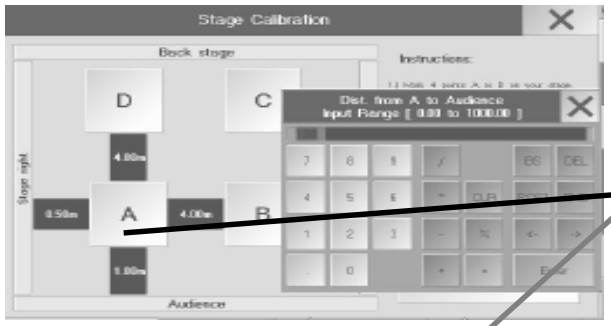
- Select fixtures
- Use Total Factor to change the magnitude of the complete figure without changing its proportion

- the value Total Factor = 0 will place all fixtures in one point.

- Use Factor X, Y and Z to change the figure's proportion on the chosen axis (see graphics on the left, the circle has been modified to an oval)

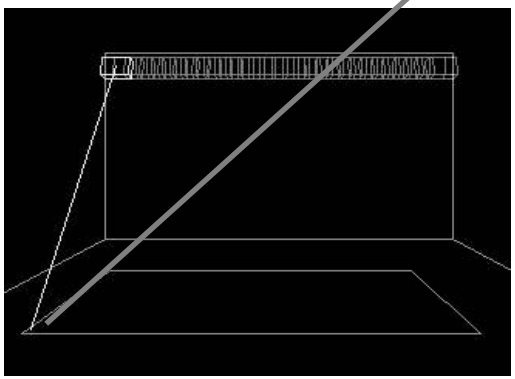
- the value 0 will yield a straight line on the respective axis;

- use POSITION + to offset the formation on 3 axes, without changing the form itself.



- ***CALCULATE FOLLOW:***

With this function, you can transfer the real fixtures' positions to the SETUP of the grandMA console. The STAGE view will then display the actual position of the fixtures to the stage. This light setting procedure should always be performed, if it is not clear whether or not fixture positions had been exactly defined in the SETUP eingetragen wurde. Important for the FOLLOW FUNCTION.



Define the light setting frame:

- On the stage, mark the corners of a sqaure (light setting frame)
- Enter the stage dimensions in SETUP / FULL ACCESS / STAGE SETUP.
- Enter the dimensions of the light setting frame and its position relatively to the stage as such in the STAGE CALIBRATION menu. The frame will appear as green square in the STAGE window
- Move the first fixture to point A of the stage (using the Encoder or track ball);
- Press STORE and Button A of the menu
- Move the fixture to B,C, and D and press STORE plus the respective button when you reach these points
- Repeat this procedure for all fixtures
- Then press the CALCULATE button. The true fixture positions will be inserted into the SETUP menu and the visualization in the STAGE window adapted accordingly.

4 Cues and Sequences

A Cue is an individual stage setting, which can be assigned and stored directly to EXECUTOR button or EXECUTOR Fader.
Several cues in line are called a sequence. Sequences of cues can also be assigned and stored on an EXECUTOR button or EXECUTOR Fader.
If cues are created using Presets, a modication of this Preset will automatically update all cues which use this Preset.
Thus, time-consuming checking and correction of individual Cues becomes unnecessary.

We recommend to use the Preset functions as often as possible.

EXECUTOR buttons or Faders can have multiple assignments for created sequences.
EXECUTOR Faders and buttons are organised in PAGES. You can work on all PAGES simultaneously. Changing pages only effects what you currently have physical access to NOT what is currently playing back. When using motor faders, those motor faders will move reflect the status of the current PAGE.
With the EXECUTOR buttons it is possible to call up the Cues, Sequences and Chasers. ***5.1.3*** Buttons and Faders.

For dimmer channels, the respective MASTER FADER, Group fader and the Grandmaster have to be pushed up.

EXECUTOR buttons do not have a Master and are therefore are activated immediately. When dimmer values are playback via Cues or Sequences **assigned to EXECUTOR buttons** priority issues may arrise then trying to control these same dimmer values from other EXECUTOR button and faders without first switching off the relevent EXECUTOR buttons. In practical terms this means that to work with Dimmers as on a convenetional console (HTP), dimmer channels have to be assigned to the Executor Faders.

4.1 Creating Cues (separate memories)

The actual stage setting can be stored as a Cue and be called up via the EXECUTOR buttons or faders.
- All **changed** (active) values (recommended setting),
- **all** momentary settings (complete Output),
- or **all** values of the **selected** Fixtures and channels can be stored as Cues.

4.1.1 Creating new Cues

Create the look on stage by direct access or presets. **3.4** and **3.5** Accessing Dimmer Channels directly or **3.7** Calling up Presets

This look shall now be stored as CUE in the following way***:***

● Press the STORE key and **hold** it. The following options and encoder names will appear on the right TFT display:

● Press one of the following keys (selected key will receive dark-grey background colour):

- Active Values: Store **only** the **active** values (all values in the FIXTURE/CHANNEL window which are shown with a **red background colour**).
- All: Store **all** settings (all fixture and channel values).
- All for Selected Devices: **All** values of the **selected** fixtures and channels will be stored (the fixture/channel numbers will be marked in yellow).

● Release the STORE key (LED stays on).

● For **this** CUE, set the following parameters via the encoders:

- ***Trigger***: Call of the CUE by GO, SOUND or FOLLOW (i.e. after previous cue in the sequence has completed) or automatically after an amount of time.
- ***Fade***: CUE will be played back with the set time; this is only possible with "FADE" functions. **2.3** Single Channel-specific Adjustments for the Current Show (point 10) and **2.5** EDITING FIXTURES (modify) (point 9)
- ***Delay***: CUE will be called up delayed by the time set; only possible for the „FADE" functions.
- ***Snap-Delay:*** The Snap values of the CUE will be played back after the set period of time (only with "SNAP" functions).

Pressing the In Fades button will switch it over to Out Fades:

- ***Out Fade:*** Dimmer channels, which **reduce their level** in the next Cue, will be faded with the set period of time.
- ***Out Delay:*** delays the outfading

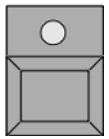
Cues can be stored on EXECUTOR faders or EXECUTOR button.

Define the assignment position of the Cue by pressing the EXECUTOR button once. When storing to an EXECUTOR FADER, press a button above or below the fader once.

The CUE is now assigned to this EXECUTOR button or EXECUTOR fader and stored in the Sequence Pool. This way it is possible, to assign the same Cue more often than once. **5.1** ASSIGN menu (Assignment to EXECUTOR)

Repeat all steps to create the next Cue.

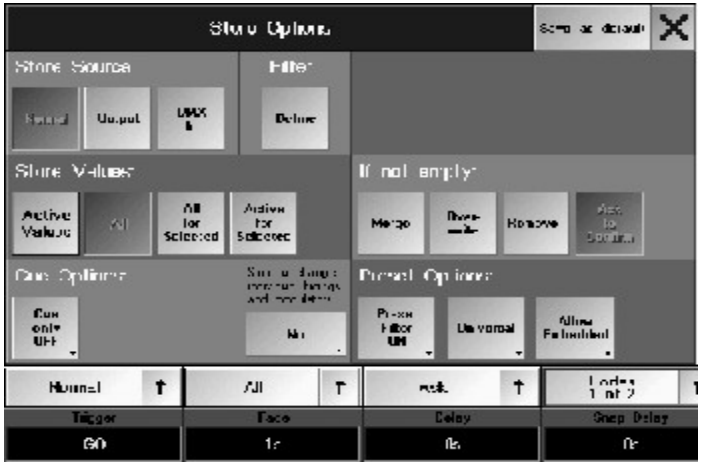
CLEAR



● Pressing the CLEAR key: once - will delete the selection, twice – will delete the active values and reset all values then.

4.1.2 Store Options - Functions available when storing

The different settings in this menu have an effect on how Cues, but also Presets are stored. The settings modified in this menu can be stored as defaults. These (Pre) sets will then be used for storing, but can also be adjusted from case to case.
Press the STORE button and **hold** it. In the right TFT Display, the following selection will appear:
Press the buttons (selected button will be backlit in dark grey):



Store Source:
- Normal: Will store all values contained in the Programmer (mind the settings under STORE VALUES).

- Output: Will store all values output (as displayed in the DMX Sheet), i.e. also the position of the Master/ Groupmaster will be accounted for. Asssignments, e.g. to Presets, will be lost, as only the output value will be stored, not the source.

- DMX IN (DMX Capture): With this setting, you can store DMX signals coming in via the DMX-IN jack, e.g. to store a non-compatible Show of another console. You can also call up individual Cues on other consoles, if the SETUP and the patched channels on the grandma are identical, and store a new Cue on the grandMA.

You can set the DMX-IN in the TOOL menu / DMX&NSP configuration / Local DMX Input. The incoming DMX has to be merged with the DMX line, on which the fixtures of the imported Show were patched.

Filter:

- Define: Will open the Attribute filter; all attributes having a green background will be saved. The settings in this filter will only be active for the following STORE process, afterwards, the filter will be reset to default again.

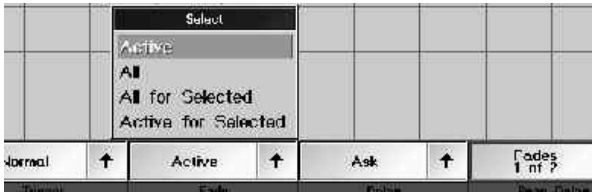
Store Values:
- Active Values: Will store **only the active values** (all values that have a **red background** in the FIXTURE or CHANNEL window).
- All: Will store **all current settings** (all values of all Scanner and Dimmer channels).
  Very memory-demanding – problems when saving presets – only recommendable for special cases.
- All for Selected Devices: Will store **all values of the selected Scanners and Dimmers** (the Scanners or Dimmers are indicated by yellow names).

If not empty:
- Merge: When expanding Cues, all settings already stored will be kept. The newly set values will be stored to the Cue as additions, already existing ones will be overwritten.
- Overwrite: Cue will be overwritten completely.
- Remove: When removing, only those parts of the Cue will be cut (deleted) out of the existing Cue that are active (red).
- Ask to Confirm: nWhen storing a second Cue on an Executor, the SAVE window will open: Here, you can execute one of the functions by selecting it.

Cue Options:
- Cue Only On/Off: Settings to save: Cue Only On or Off
- Reset Times On/Off: Preset, whether the set times are to be reset to default when saving CUEs the next time (can be set in SETUP / DEFAULTS) (RESET TIMES ON) or whether they are to be kept (RESET TIMES O

.**Preset Options:** **3.7 Creating and calling up Presets**

Pressing the Save as default button will save the presets as defaults.



STORE ENCODER WINDOW:

● press ***STORE***

The Encoder window displays the setting of 3 areas of the OPTION menu. The settings can be changed (for the following STORE process) temporarily from the pull-up menus. On the next STORE, the very setting will reappear that was defined in the Option menu.

4.1.3 Overwriting a Cue

If you wish to overwrite a Cue completely, simply use the same EXECUTOR fader or EXECUTOR button once again. The following window will appear:

In order to overwrite this cue completely, press the OVERWRITE key (If the executor contains more than one cue you will have to be specific about which cue you want to Store - 4.2 Programming Sequences).

4.1.4 Merging a Cue

When merging cues, all existing and stored settings will be maintained. The newly set values will be stored and added to the cue, while already existing values will be overwritten.

If you wish to merge a cue, simply use the same EXECUTOR Fader or EXECUTOR button once again. The SAVE (STORE) window will appear (as above). In order to merge this cue, press the MERGE key (If the executor contains more than one cue you will have to be specific about which cue you want to store - 4.2 Programming Sequences).

4.1.5 Removing a Cue

In the removing operation, the active values (red) will be subtracted from the already existing cue.

If you wish to remove from a cue, simply use the same EXECUTOR Fader or EXECUTOR button once again. The STORE window will appear (as above). In order to remove from this cue, press the REMOVE key (If the executor contains more than one cue you will have to be specific about which cue you want to Store - 4.2 Programming Sequences).

You can also remove specific parts of a complete sequence by entering: [STORE] [SEQUENCE] [Sequence number] [CUE] [1] [THRU] [number of last Cue] [ENTER]. A window will open in which you confirm your operation by pressing the REMOVE key. (This syntax also applies for “OVERWRITE” and “MERGE”.)

Caution! In NON-TRACKING mode, only Dimmer channels of the first copied Cue are taken account of. For the following Cues, the Dimmer values are “0” and will have to be reprogrammed manually.

4.2 Programming Sequences

Sequence is the generic term for multiple of cues, with the option of various Fade and Delay times per channel and cue. Sequences can be stored either on an EXECUTOR fader or an EXECUTOR button.

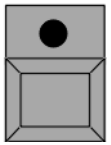
● Store the first Cue (first step of a sequence) either on an EXECUTOR fader or an EXECUTOR button. **4.1** Creating Cues

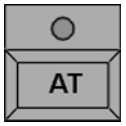
- Create the second Cue (next step of the sequence) as before. When storing the second Cue, use the same EXECUTOR fader or EXECUTOR button. Now, the STORE window will appear:
- In order to create a Sequence (more than one Cue), press the CREATE SECOND CUE key. The Cue will now be stored in this Sequence as the second step (Cue 2).

In the ASSIGN menu, you can define whether this Sequence should be executed in TRACKING or NON-TRACKING mode. TRACKING and NON TRACKING. **5.1.4** EXECUTOR SETTINGS

4.2.1Copying Sequences

SEQUENCE





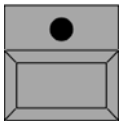
Once a Sequence has been created, it can be copied completely with all component Cues, Fade and Delay times.

- Press the COPY key once (LED is on).
- Press the SEQUENCE key once (LED is on).

Using the numeric keypad, enter the number of the Sequence to be copied. All sequences and their numbers will be displayed in the Assign menu. **5.1** ASSIGN Menu

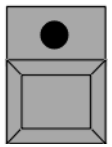
- Press the AT key once (LED is on).
- Using the numeric keypad, enter the number of the new Sequence and confirm with ENTER.

STORE

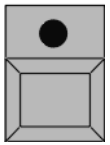


4.2.2Including Cues

SEQUENCE



CUE

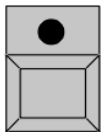


Set a Cue **4.1** Creating Cues

- Press the STORE key once (LED is on).
- Press the SEQUENCE key once (LED is on).
- Enter the number of the Sequence using the numeric keypad.
- Press the CUE key once (LED is on).
- Enter the number of the **new** Cue via numeric keypad and confirm with ENTER.

Example: A new Cue is to be included between Cue 3 and Cue 4. This new Cue will be named for example Cue no. 3.1(numbers between 3.001 and 3.999 are possible).This way, 999 Cues can be included between two Cues.

SELECT



4.2.3Default Sequence (Master Sequence)

When creating sequences, Cues can directly be stored on a Default Sequence.

- Press the SELECT key once (LED is on).
- Select the respective EXECUTOR, which shall be the Default Sequence by pressing the respective EXECUTOR button once. The headline of the small EXECUTOR window will be green.

To create the first Cue of the Default Sequence. **4.1** Creating Cues

- Push STORE key 1x (LED flashes).
- Push ENTER key 1x; the created cue is now stored in the Master Sequence.

TIPP If no EXECUTOR button has been selected before storing, and you confirm with ENTER, the stored Cue will always be added to the current Default Sequence.

In the Default Sequence, Cues can be played back directly**

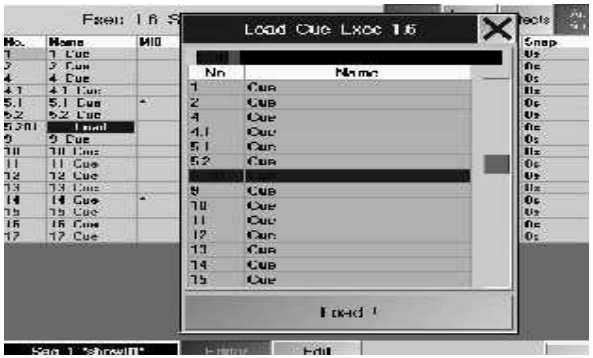
- Press the GOTO key once (LED is on).
- Enter the Cue number on the numeric keypad and confirm with ENTER. The Cue will be played back with the set duration (**2.13** Settings in the DEFAULTS menu).

When played back Cues directly, you can enter a FADE or DELAY time using the TIME key.
After having entered the Cue number, press the TIME key for the FADE time once and enter the period of time using the numeric keypad, or press the TIME key once more for the DELAY time, enter the duration using the numeric keypad and confirm with enter. The Cue will be played back with the entered times.

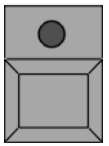
The Cue will always be played back as if the Sequence was run from the very beginning. That means, all previous steps will be accounted for with regards to the tracking of values(this depends on whether Tracking had been activated in the ASSIGN menu. siehe ***5.1.4 Executor Settings)***

Besides the Master sequence, you can select multiple Executors as default sequences. These are indicated by a dark-green title window - the Master sequence (only possible for 1 Executor) has a light-green title window. *All default sequences can be operated at the same time if using the yellow buttons. All default sequences can also be operated by using a combination of a command (e.g. GO+, Pause, OFF) and simultaneously pressing ENTER.

- Hold the SELECT button down and click on the desired Executors (no effects or Bitmap effects); the first Executor becomes the Master sequence (light green) and the following Executors become Default sequences (dark green). This selection is temporary and cannot be saved in the Show file.
- A further selection (holt the SELECT button and click on Exec) will delete the previous selection.



GOTO

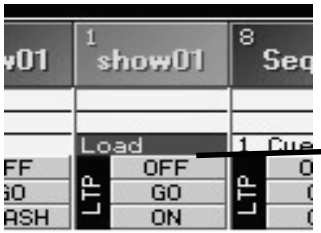


4.2.4 LOAD CUE

You can use LOAD CUE in order to directly call up a certain cue with either one or several executors.

- Press the ***GOTO*** key twice (LED is blinks)**.
- Select an executor by shortly pressing a key.

A window with a chart appears. All cues of this sequence are listed in this chart.
If you select one of these cues, it will be loaded. This cue will be displayed as next (red blinking background) in the small executor window above the executor.



● Start this cue with the GO button.

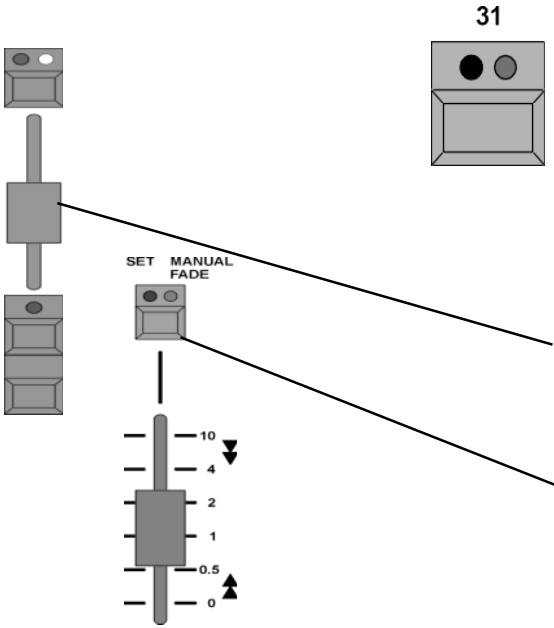
Cues within the Mastersequence can be directly loaded**

● Press ***GOTO*** key twice (LED is on).

● Enter Cue number using the keypad and confirm with ***ENTER***.

The Cue will be loaded and displayed as next (red blinking background) in the small executor window.

● Start this cue with the ***GO*** button.



4.2.5Playing back sequences or chasers

Using the EXECUTOR button, you can playback the stored Sequences directly.

If the green LED on the button is lit, a Cue or a Sequence of cues is stored on this button.

If the yellow LED is lit or is flashing, this Cue, Sequence of cues or Chaser (a sequence which as been told to run automatically) is activated.

The yellow LED indicates the beat of a Chaser.

Push up the respective Master Fader for the EXECUTOR faders to see the dimmer values. Playback Cues using the Go+ button (standard setting is button below the Fader). If the green LED in the button above the Fader is on, a Cue or a Sequence is stored on this button.

If the yellow LED is on or is flashing, this Cue, the Sequence or the stored Chaser is activated. The yellow LED indicates the beat of a Chaser.

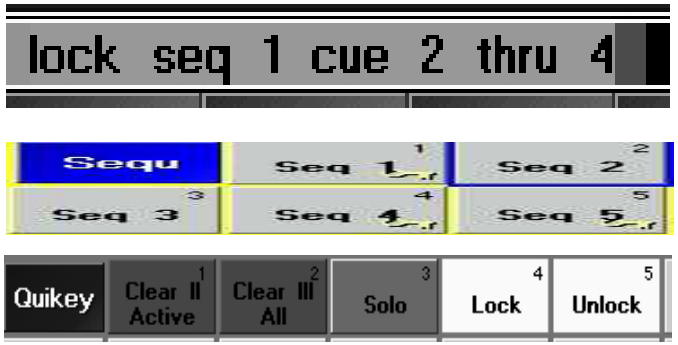
Using the PAGE keys, you can select other pages. **5.5** PAGE Administration (PAGE)

With the Fader to the right of the EXECUTOR buttons, you can either set fixed fade times or perform manual fade-in when playing back Cues using the EXECUTOR buttons.

Press the key above the Fader once (red LED is on). Set the desired fade time using the Fader. When selecting the Sequence using the EXECUTOR buttons, only the fade time set here will be used (this also applies to SNAPDELAY times).

Press the key above the Fader again (green LED is on). Select the sequence using the EXECUTOR button. Using the Fader, you can now fade in the selected sequence. Default setting for the Fader can be changed to fade just upwards or in both directions **2.13** Settings in the DEFAULTS menu below the Executor Defaults Crossfade.

With the PREVIEW function, Cues can be displayed in the FIXTURE SHEET or CHANNEL SHEET without being output to stage. Press the PREVIEW key once and playback the desired Cue using the EXECUTOR button.



4.2.6 Saving a sequence

To protect a sequence or Cues of a sequence against unintended modifications, you can lock them; Playback is possible, the Edit mode cannot be activated, however.

● On the CommandLine, enter: lock_seq_(number or area of the sequences)
lock_seq_(number of the sequence)_cue_(number or area of the Cue)

In the sequence pool, the locked sequences are identifiable by their yellow key symbol, in the Assign menu, all values are displayed in red. If only some part (individual Cues) of the sequence are saved, this will not be displayed in the sequence pool.

If you want to re-edit the sequence:

● On the CommandLine, enter: unlock_seq_(number of the sequence)
unlock_seq_(number of the sequence)_cue_(number or area of the Cue)

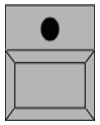
or

● Insert the functions LOCK / UNLOCK as Quikeys

● Press LOCK or UNLOCK and choose the sequence in the sequence pool

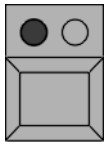
4.3 Editing Sequences

EDIT



During editing procedures, you can change **all** values of cues, add values or delete them. The X-FADE and DELAY times can be altered and the trigger of cues via GO key, X-FADER, SOUND or TIME can be defined.
Apart from what is indicated in this chapter, there are three other ways of editing:

4.1.3, 4.1.4, 4.1.5 Overwriting, expanding, removing Cues
4.3.4 Update Cues or Presets
5.3 EXECUTOR window



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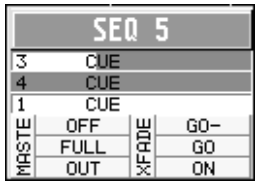
- Press the EDIT key (LED is on). The sequence may not be saved, see 4.2.6
- Select the sequence with the respective EXECUTOR button.

Or:

Left click with the mouse into the small window above the EXECUTOR Fader or use the touchscreen.
The EDIT menu appears on the right TFT display, showing a listing of the individual cues contained in the selected sequence.
You will find the addressed EXECUTOR fader or button in the headline, giving the number of the PAGE and the sequence name.
The second line will give you the functions of the columns.



- ***No***.: Number of Cue
- ***NAME***: Name of Cue
- ***MIB***: Activate MIB (Move In Black function) individually for each cue. Activate it by selecting a cell and shortly pressing on the encoder on the right side of the display. Activation is confirmed by YES.

MIB can only be used in cells where a " ✱ " is displayed.

- ***Trig***: The trigger for the Cue (GO button, SOUND, TIME or FOLLOW)

If the ***TIMES*** key on the title bar of the edit window is pressed:

- ***Fade***: FADE time
- ***Outfade***: Duration of the fade time on Dimmer channels which are reducing in value
- ***Delay***: CUE will be called up delayed by the time set; only possible for the „FADE" functions
- ***Outdelay***: Outfade will called up delayed by the time set
- ***Snap***: Duration of the DELAY
- ***I.Fade***: Duration of the individual FADE time (min and max)
- ***I.Delay***: Duration of the individual DELAY time (min and max)

If the ***LOOPS*** key on the title bar of the edit key is pressed:

- ***LOOP***: Will initiate a jump after the cue that includes the loop statement has finished
- ***LOOPDELAY***: The length of time or the number of occurences of a LOOP will be displayed
- ***LINK***: The Command Line Order to be triggered will be displayed
- ***LI. DEL***: The delay value for the execution of the Command Line Order will be displayed

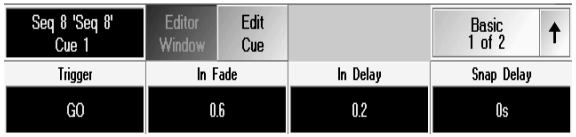
If the ***EFFECTS*** key on the title bar is pressed:

- ***EFFECTS***: Display of the effects calls

A second sheet will appear in the lower part of the display:

- ***NO***.: Number of the Effect
- ***NAME***: Name of the Effect

- ***ACTION***: Type of Effect call (play forwards, play backwards, pause, stop)
- ***INTENS***: Display of the defined size of the Effect
  F (Fade): If Y (YES) is displayed, the size will be faded in with the set fade time
- ***SPEED***: Display of the defined speed of the Effect
  F (Fade): If Y (YES) is displayed, the speed will be faded in with the set fade time
- ***SOFT***: Display of the set softness (softer fade in) of the effect
  F (Fade): If Y (YES) is displayed, the softness will be faded in with the set fade time

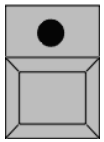


If AUTO SCROLL key is pressed, the chart will automatically move to top/bottom when handling larger sequences. The chart will show you all cues of a sequence including the various TRIGGER functions.

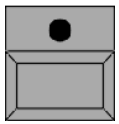
The EDIT CUE key will enable you to change values of individual cues (below).

Description of each encoder.

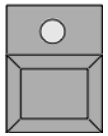
BLIND



UPDATE



CLEAR

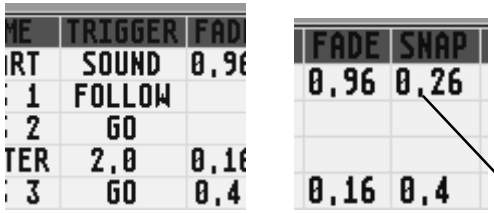


4.3.1 Changing values for individual cues in the sequence

– Select the Cue that you want to change (red cell) in the Name column.
– Press the Edit Cue key (LED in the EDIT key starts flashing).
– ***All values of the Cue will now be played back on stage and displayed (active, red)*** ***in the Channel & Fixture sheets.***
–The cue can now be changed by either direct access or presets. **3.4** Accessing Fixtures directly (in the FIXTURE SHEET) / **3.5** Accessing Dimmer Channels directly (in the CHANNEL SHEET) and **3.7** Creating and calling up Presets
If this Cue has been changed, the LED in the Update button will be on.•
● If the Cue is not to be seen on stage, activate the Blind function by pressing the BLIND key (integrated LED is on).

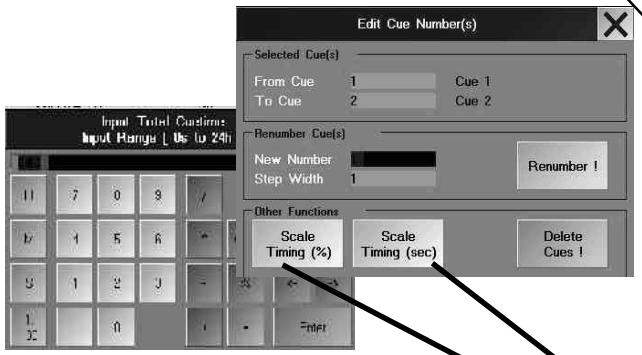
● Press the Update key once. Choose OK in the window that has just opened. The changed Cue is now stored.

● Press the CLEAR key twice if necessary (Cue values will be deleted in the FIXTURE or CHANNEL window).
For modifying further Cues, select the respective Cue one by one (will be displayed on a green background).
● Repeat all steps as described with first cue.



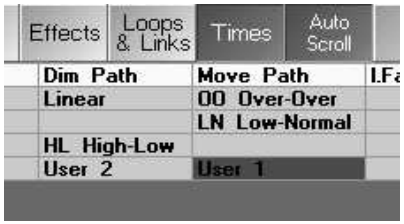
ME	TRIGGER	FAD
IRT	SOUND	0,9
1	FOLLOW	
2	GO	
TER	2,0	0,1
3	GO	0,4

FADE	SNAP
0,96	0,26
0,16	0,4



No.	Name	MIB	Trig	Fade	Outfade	Delay
1	1 Cue	*	6.50	4s		1s
2	2 Cue		5s	3s		1.50
3	3 Cue		4s	2s		2s
4	4 Cue		8s	2s		1s

No.	Name	MIB	Trig	Fade	Outfade	Delay
1	1 Cue	*	7.80	4.80		1.20
2	2 Cue		6.67	4s		2s
3	3 Cue		6s	3s		3s
4	4 Cue		16s	4s		2s



4.3.2 Changing the TRIGGER (Call-up) of individual Cues within a Sequence

Select the respective cue within the Trig column (red cell).
Enter the following with the left Encoder or via the keyboard and confirm with ENTER.
- ***F***: for FOLLOW mode
- ***G***: for GO button
- ***S***: for SOUND signal
- ***No.***: Automatically according to set time (e.g. if the set time is 1.5, this Cue will be called up after 1.5 seconds automatically).

4.3.3 Changing the FADE or DELAY times of individual steps within the Sequence

- Select the respective cue (red cell).
- Here, the duration for **this** cue can be changed with the In-Fade, In Delay or Snap encoder.
- Pressing the **Basics** button (above the right Encoder) will switch this button to **Out**: Now, you can modify this time with the Encoder Out-Fade.

If no FADE or DELAY times are indicated, none are stored in this CUE.

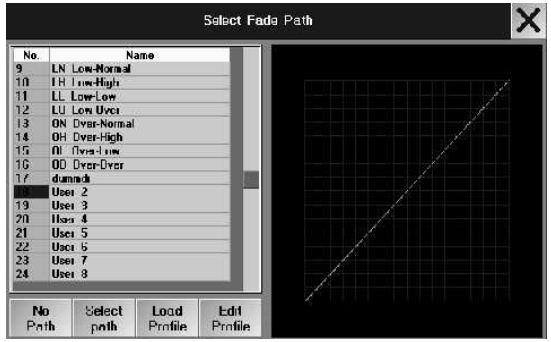
Changing all times of one or more Cues (CUE TIME SCALING)Changing all times of one or more Cues (CUE TIME SCALING)

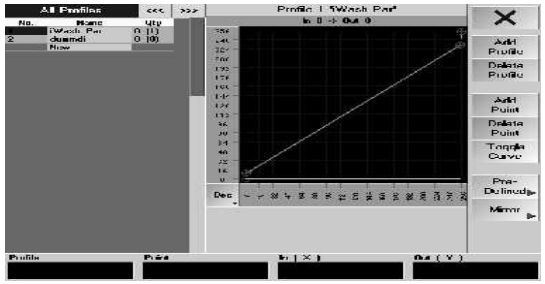
With this function, you can scale or compress all Fade, Delay, and Trigger times.
- select one ore more Cues (red cell).
- click on the Cue's number using the right mouse button or the Encoder on the side of the monitor, der rechten Maustaste oder dem Encoder neben dem Monitor
- In the EDIT CUE NUMBER menu, select a percentage or absolute change
  - Scale Timing (%): All times of the marked Cue will be changed to the entered value.When entering 100%, all values remain unchanged.
  - Scale Timing (sec): The total time of the marked Cues will be changed to the entered time – all times will change proportionally. For the example on the left: For the 4 marked Cues, 6 seconds were entered; DELAY and FADE were increased to 6 seconds in total; the trigger time increases according to the proportional changes of the individual times.
- Use the Calculator to make the changes, and confirm with ENTER.

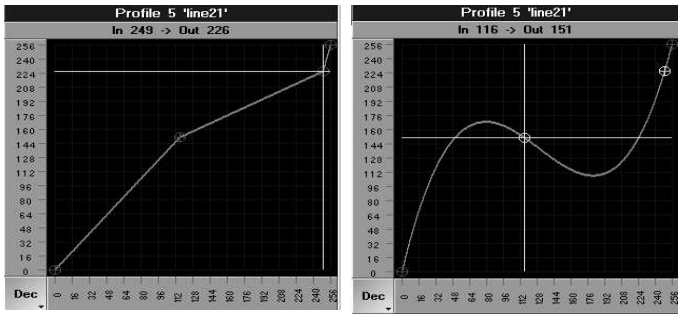
WARNING: If you compress all times to 0, you will no longer be able to enter longer times. You would then have to enter all times anew, or you could restore them, if the OOPS function was activated (not on the MICRO).

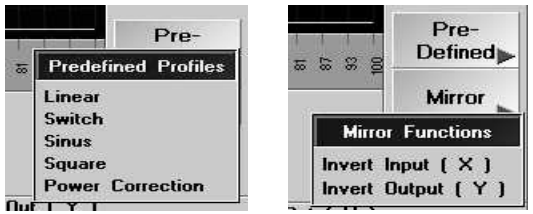
FADE times in Profiles

Besides lineary FADE times, you can also use to vary FADE procedures using a profile. You can fade dimmers and PAN/TILT movements using individual profiles. In this version, it is irrelevant whether the PATH column contains no entry or „linear". You can choose from 43 paths, 16 of which are pre-defined, and 16 that you can assign self-









created profiles to.

- Open the Cue overview
- click on the cell in the DIM PATH column (for the FADE profile of the dimmer) or MOVE PATH (for the FADE profile of the PAN/TILT movement) and press on the right Encoder.

The SELECT FADE PATH menu will open.

- select a ready-made profile

- Select a profile from the menu (number or profile name has a blue background), which will display the profile as a graphics
- press
- SELECT PATH

The selected profile will appear in the PATH column.

For some of the pre-defined profiles, the curve position may partly lie outside of the coordinate system. A fixture can follow this negative amplitude only, if it is not already positioned at it's ultimate 'stop'. For self-created profiles, you cannot place the curve outside of the coordinate system.

- assigning a self-created profile to a FADE path

- Select an empty path from the menu (user 1 to user 16)

- press NO PATH, if you don't want to assign a profile
- press LOAD PROFILE, if you want to assign a self-created profile to the path
- press SELECT PATH, so that the profile will be put into the PATH column of the Cue.

or create or modify a profile

- Select an empty profile from the menu (user 1 to user 16)
- press EDIT PROFILE, to create a new profile, or to modify an existing one
- from the ALLE PROFILES overview, select an existing profile to be modified

or

- in the ALL PROFILES overview, click on the NEW PROFILE line, press on the right Encoder and enter a name; confirm with OK.

As default, the new profile will contain a diagonal line.

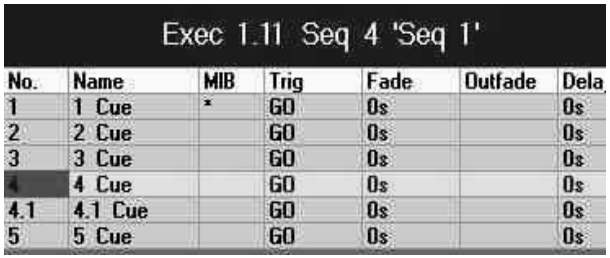
- a touch on the coordinate system will create a cross-hair pointer. Use ADD POINT to insert an intersection, or delete the point at the pointer using DELET POINT.

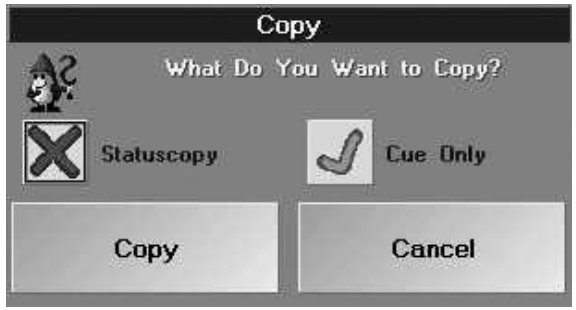
4.3.5 Moving Cues

- Press the MOVE Key once (LED is on).
- Press the SEQUENCE Key once (LED is on).
- Using the keypad, enter the number of the Sequence in which Cues are to be moved.
- Press the CUE key once (LED is on).

Using the keypad, enter the number of the first Cue to be moved. If only one Cue is to be moved, continue with the AT key.

- Pressing the +Key will move the selected cue and the cue indicated by the subsiquent number
- Pressing the THRU kKey on the keypad will move the Cues from...to **(including last Cue).**


Exec 1.11 Seq 4 'Seq 1'
No. Name MIB Trig Fade Outfade Dela
1 1 Cue * GO 0s 0s
2 2 Cue GO 0s 0s
3 3 Cue GO 0s 0s
4 4 Cue GO 0s 0s
4.1 4.1 Cue GO 0s 0s
5 5 Cue GO 0s 0s



When pressing the –Key, the Cue with the next number will **be excluded from the move operation.**

- Press the AT key once (LED is on).
- Enter the new number for the moved Cues using the keypad.

Example: The Cues are to be inserted between Cue 10 and Cue 11. Number these Cues e.g. as 10.1 (possible Cue numbers are 10.001 - 10.999). This way, up to 999 Cues can be inserted between two existing Cues.

- Confirm with ENTER.

When moving **one** Cue, the COPY window will open.
After pressing the key on the left of ***Statuscopy***, you can choose between:

During the moving process, only the values and times actually stored in this Cue **will be moved**. Tracked information will be ignored.

The Cue will be moved as it would actually be realized on stage. That means, all previous steps will be taken into account and the result will be moved.

By pressing the button on the left of **Cue Only**, you can choose between:

Normal moving (with or without Status)
Will copy the values of the step before into the step after, but only to a position having no value; this wouldn't be wise. The moved Cue will now be a „Cue Only"

Pressing COPY will move the Cue, CANCEL will abort the process.

4.3.4 Copying Cues

- Press the COPY Key once (LED is on).
- Press the SEQUENCE Key once (LED is on).
- Using the keypad, enter the number of the Sequence from which the Cues are to be copied.
- Press the CUE Key once (LED is on).
- Using the keypad, enter the number of the first Cue to be copied. If only one Cue is to be copied, continue with the AT Key.

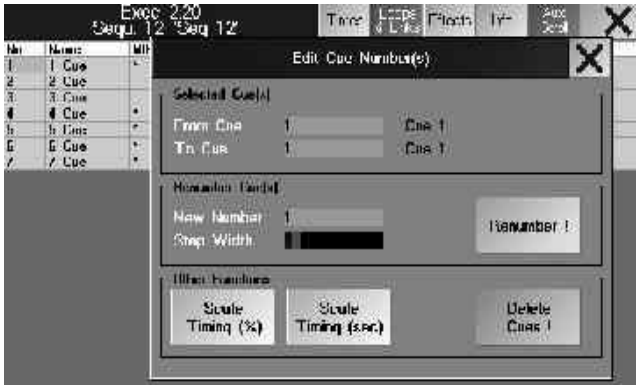
Pressing the +Key will copy the selected cue and the cue indicated by the subsiquent number.
Pressing the THRU Key on the keypad will copy the Cues **from...to** (including the last Cue).
When pressing the –Key, the Cue with the next number will **excluded from the** copying operation.
Press the AT key once (LED is on).
Enter the new (destination) number for the copied Cues using the keypad.
Example: The Cues are to be inserted between Cue 10 and Cue 11. Number these Cues e.g. as 10.1 (possible Cue numbers are 10.001 - 10.999). This way, up to 999 Cues can be inserted between two existing Cues.
Confirm with ENTER.
When copying **one** Cue, the COPY window will open.
After pressing the key on the left of Statuscopy, you can choose between:

Only the values and times actually stored in this Cue will be copied. The tracked information will be disregarded.

The Cue will be copied as it would actually be realized on stage. That means, all previous steps will be taken into account and the result will be copied.

By pressing the button on the left of **Cue Only**, you can choose between:
Normal Copying (with or without Status)

Will copy the values of the step before into the step after, but only to a position having no value; this wouldn't be .



4.3.6 Deleting and renumbering Cues

Right click with the mouse on the respective Cue in the NO. column.
The following window will open.
- From Cue: Display of the first selected Cue. The number can be modified by clicking on it.
- To Cue: Display of the last selected Cue. The number can be modified by clicking on it.
- New Number: Display of the first new number of the selected Cues. The number can be modified by clicking on it.
- Step Width: Display of the steps, in which the Cues' new numbers will be placed. The number can be modified by clicking on it.

Deleting Cues

- Select the Cue to be deleted. By pressing the Delete Cue ! key, the Cue will be deleted. If you want to delete not only one but several Cues, select the respective Cues.
- By pressing the Delete Cue ! key, the Cues will be deleted.
- With CUE ONLY the cue will be deleted without changing the following cue.
- With CUE ONLY the cue will be deleted; all previous steps will be taken into account.

Deleting by mistake can be undone by OOPS!*

Renumbering Cues

Select the Cue to be renumbered. Enter the new number on the right side of "New Number". By pressing the RENUMBER key, the Cue will be renumbered. If you want to renumber not only one but several Cues, select the respective Cues. Enter the new number for the first Cue on the right side of "New Number." By pressing the RENUMBER key, the Cues will be renumbered.

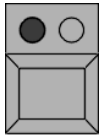
4.3.7 Inserting LOOPs

Program flow inside a cuelist can be controlled by LOOPS.
Loops have a destination. If a Cue is executed that contains a loop, program flow will continue with the given destination instead of the next cue.
Loops can be timed. A timed loop will stay inside the loop until a given time elapses.
Otherwise loops are counting. A counting loop will stay inside the loop until the loop counter reaches zero.
Loops can be endless. An endless loop will stay forever inside the loop once it was activated.
Make a right mouse click on the respective Cue in the LOOP column. The SELECT LOOP-TARGET window will open.
Select the Cue to which the jump is to be performed. The Cue will be listed in the top line.
Select the jump function by pressing the respective Key:
– With the LOOP (TIMED) Key, a timed loop will be created.
– With the LOOP (COUNT) Key, a counting loop will be created.
– With the DELETE Key, you can delete the loop.
For the indicated loop, you can now edit the duration or the loop counter value in the LOOPDELAY column by clicking on or entering the respective value.
Example: When you enter „5" in the TIMED cell, the loop will be executed for 5 seconds. When you enter „5" in the COUNT cell, the loop will be repeated five times, before the Sequence will be continued normally.d.

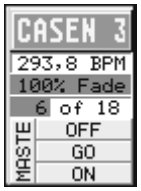
4.3.8 Inserting Command Line Commands**

Within a Sequence, a Command Line Command can be triggered by a Cue. As soon as this Cue is reached, this command will be executed. By setting a time frame, the command can be played back with its own individual delay time. **10.** Command Line

A click on the respective Cue in the LINK column. For the selected command, you can now enter a delay time in the LI. DEL column. The command will only be executed after this time has ended, e.g. if you enter „5“ in the LI. DEL colu mn, the command will be executed after a delay of five seconds.t.



19



4.4. Editing Chasers

A Chaser is a sequence which runs automatically. During the editing process, you will be able to modify, add or delete **all** the values of the individual Cues. Speed, X-FADE and SNAP-DELAY times can also be adapted globally. Apart from what is indicated in this chapter, there are three other ways of editing:

4.1.3, 4.1.4, 4.1.5 Overwriting, expanding, removing Cues

4.5 and ***3.7.5*** Update Cues or Presets

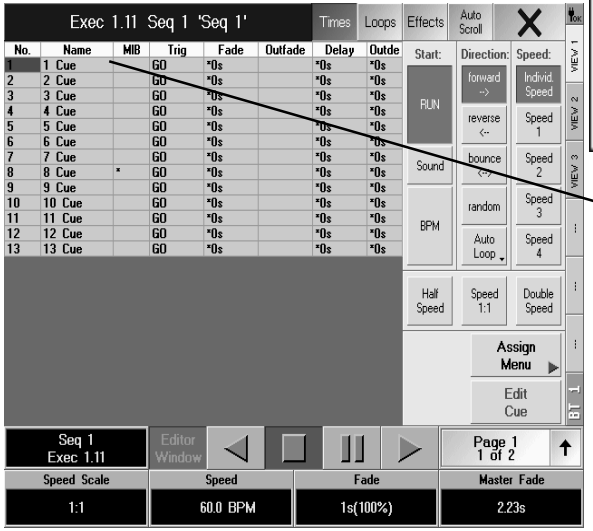
5.3 EXECUTOR window

- Press the EDIT key (LED is on).
- Select a Chaser with the respective EXECUTOR key.

Or:

- Left click with the mouse into the small window above the EXECUTOR Fader.

The EDIT menu appears on the right TFT display, giving a listing of the individual cues.
The selected EXECUTOR fader or button is now listed in the headline, giving the page number and the name of the sequence.



In the second line, the column functions are indicated

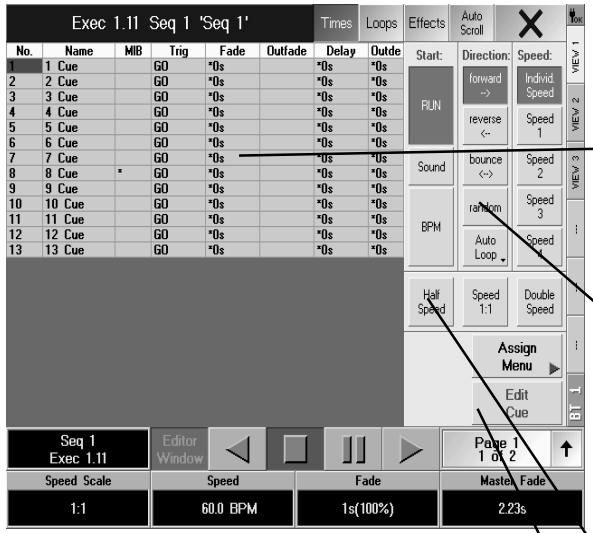
- ***No***.: The number of the individual Cues
- ***NAME***: Name of the Cue
- ***MIB***: Activate MIB (Move In Black function) individually for each cue. Activate it by selecting a cell and shortly pressing on the encoder on the right side of the display. Activation is confirmed by YES.

MIB can only be used in cells where a “ * “ is displayed.

- ***TRIGGER***: Has no effect on a Chaser

If the ***TIMES*** key on the title bar is pressed:
- ***FADE***: Has no effect on Chaser
- ***OUTFADE***: Has no effect on Chaser
- ***SNAP***: Has no effect on Chaser
- ***I.FADE***: Has no effect on Chaser
- ***I DELAY***: Has no effect on Chaser

If the ***LOOPS*** key on the title bar is pressed:
- ***LOOP***: Will initiate a jump after the cue that includes the loop statement has finished.
- ***LOOPDELAY***: The length of time or the number of occurences of a LOOP will be displayed
- ***LINK***: The Command Line Command to be triggered will be displayed



- ***LI. DE***L: The delay value for the execution of the command will be displayed

If the ***EFFECTS*** key on the title bar is pressed:

- ***EFFECTS***: Display of the Effect calls

A second sheet will appear in the lower part of the display:

- ***No***.: Number of the Effect Group
- ***NAME***: Name of the Effect Group
- ***ACTION***: Type of Effect call
- ***INTENS***: Display of the defined size of the Effect Group
  F (Fade): If Y (YES) is displayed, the size will be faded in with the set fade time
- ***SPEED***: Display of the defined speed of the Effect Group
  F (Fade): If Y (YES) is displayed, the speed will be faded in with the set fade time
- ***SOFT***: Display of the set softness (softer fade in) of the effects
  F (Fade): If Y (YES) is displayed, the softness will be faded in with the set fade time

The chart shows all Cues in the Chaser (Sequence):

With the help of these keys you can define the various functions for the Chaser.

- ***RUN***: Chaser runs with the set speed. Fade and Delay times will be adjusted in terms of percentage.
- ***SOUND***: Triggering of the steps (cues) via a sound signal. Fade and Delay times will be executed with the set time.
- ***BPM***: Playback of the steps (cues) via automatic recognition of **B**eats **P**er **M**inute. Fade and Delay times will be adjusted in terms of percentage.
- ***FORWARD***: Chaser runs forward.
- ***REVERS***: Chaser runs backwards.
- ***BOUNCE***:Chaser runs forward, then backwards and so on.
- ***RANDOMLY***: Chaser plays back individual steps (cues) on random basis.
- ***AUTO LOOP / SINGLE ON / SINGLE OFF*** (Toggle by pressing the key):

On ***AUTO LOOP***, after the last step, the Chaser will jump back to the first and continue. With ***SINGLE ON***, the Chaser makes one run and stops at the last Cue. With SINGLE OFF, the Chaser makes one run and switches off after the last Cue.

- ***SPEED INDV***.: On RUN, an individually set speed will be used.
- ***SPEED 1–4*** : On RUN, the respective SPEED-Group will be used. These set speeds can be used for all Chasers.

5.1.6 Assigning Special Masters

Using the keys, you can either divide or double the set speed.

HALF SPEED: Pressing 1x, the set speed will be divided in half – this can be done up to 8 times (The modification will be displayed above the left Encoder).

1:1: Resets the speed to the set value.

DOUBLE SPEED: By pressing this once the set speed will be doubled – this can be done up to 8 times (Modification will be displayed above the left Encoder.

This key will bring you to the ASSIGN menu. **5.1** ASSIGN menu

The Edit-CUE button allows you the modify values of individual Cues (LED in Edit key will blink) **4.4.1** Changing values of individual Chaser steps

Above the encoders on the right screen, playback soft keys and the name of the chase are displayed. The functions

of these soft keys are:

EDIT:	Open edit menu for the chase	
LEFT ARROW:	GO-	(Run backwards)
SQUARE:	OFF	(Stop)
DOUBLE LINE:	PAUSE	(Has toggle function)
RIGHT ARROW:	GO	(Run forward)
PAGE X:	Toggle between encoder functions. The important functions are on page 1.	

As usual, a pushed and then turned encoder works with a different resolution, depending on the settings in the setup menu.
An encoder click (push and release without turning) brings up a huge fader on screen.

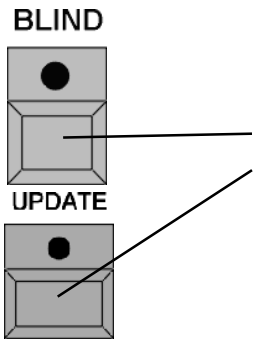
Encoder functions of page 1:
SPEED SCALE: Divides or multiplies the speed with a factor.
SPEED: The speed of the chase. The accessible range depends on the speed scale. If the chase belongs to a speed group, changing the chases speed will affect the speed group (also the other way around).
FADE: Step by step INFADE time. Defines the smoothness of the running chase.
MASTER FADE: Controls master in & outfade. It is used when starting or switching off the running chase. With the encoder the „Master Fade“ can be set to “DEFAULT“. In this position the predefined M-Fade from the menu setup/defaults/playback timing will be used.

Encoder functions of page 2:
SPEED GROUP: Link chase to a speed group or let it have individual speed.
OUTFADE: Defines step by step OUTFADE time. With the encoder the OUTFADE can be set to always equal INFADE.
SNAPDELAY: Defines the trigger point for snapping channels in the chase.

4.4.1 Modifying values of separate Chaser steps

- Select the Cue to be modified in the Names column (red cell).
- Press the Edit 7 key (LED in Edit key will blink).
- **All values of the Cue will now be played back on stage and displayed (active, red) in the Channel & Fixture sheets.**

– This cue can now be modified by either direct access or by presets. **3.4** Direct Access to Fixtures (in the FIXTURE SHEET) / **3.5** Direct Access to Dimmer Channels (in the CHANNEL SHEET) and **3.7** Creating and calling up Presets



If the Cue is not to be seen on stage, activate the Blind function by pressing the BLIND key (integrated LED is on).

- Press the UPDATE key once. Choose OK in the window that has just opened. The changed Cue is now stored.
- Press the CLEAR key twice (Cue values will be deleted in the FIXTURE or CHANNEL window).

For modifying further Cues, select the respective Cue (Cue will be displayed on a green background).
Repeat all steps as described with the first cue and store with STORE.

4.3.4 Copying Cues
4.3.5 Moving Cues
4.3.6 Deleting and renumbering Cues

4.3.7 Inserting LOOPs
4.3.8 Inserting Command Line Commands

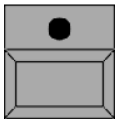
Changing times for one or more Cues:

- The Time Scaling function (described in chap. 4.3.3) can also be used for Chasers.

4.5 Updatings Cues

When executing sequences, Cues can be modified and stored directly.

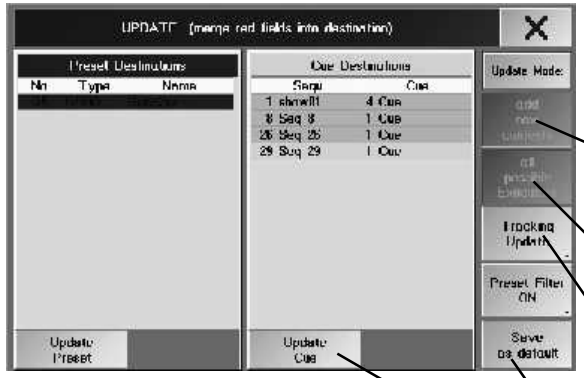
UPDATE



Playback the Cue to be modified. Modify the Cue by either direct access or via presets (UPDATE key LED is on).
3.4 Direct Access to Fixtures (in the FIXTURE SHEET) / **3.5** Direct Access to Dimmer Channels and **3.7** Creating and calling up Presets

- Press the Update key once.

The UPDATE window will open



- By pressing this key, you can toggle between “only original contents“ and “add new contents“

- Only original contents: Upon updating the cue, only the changes on fixtures/channels which have already been used in this cue will be stored.

- Add new contents: Upon updating the cue, all changes will be stored regardless at to whether those fixtures/ channels have already been used in this cue.

- By pressing this key, you can toggle between “only last called Executor“ and “all possible Executors“.

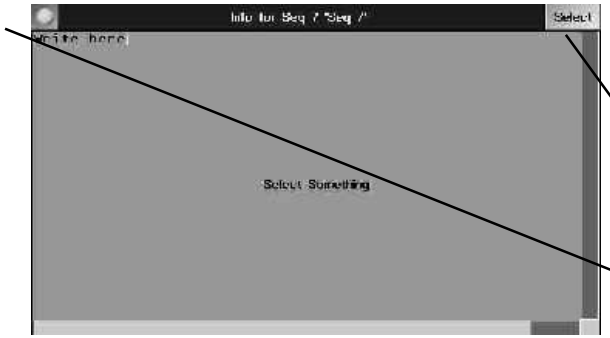
- Only last called Executor: The“Cue Destinations“ chart only shows the last played back cue.
- All possible Executors: The “Cue Destinations“ chart shows all currently playing back cues on all executors.

- “Tracking“ or “Cue Only“ Update. A “tracking“ update may affect “cues in the future“ while a “cue only“ update does not affect them.

- Pressing the “Update Cue“ key will update that cue being displayed with a red background. You can select another cue using the encoder.

- Pressing the “Update All Cues“ key will update all cues listed in the chart.

- Pressing the Save as default button will save the (pre) sets as default settings (e.g.: Only original contents or Add new contents). The next time you open the Update menu, these settings will be available.

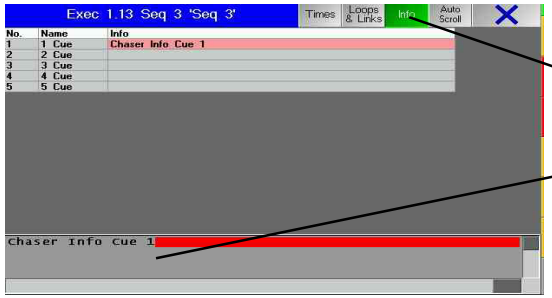


4.6 INFO - window

A information window can be added to every executor. Type here information for sequenzes, chasers or effects. Additional you can type infomation for every cue in a sequenz, a chaser or an effect.

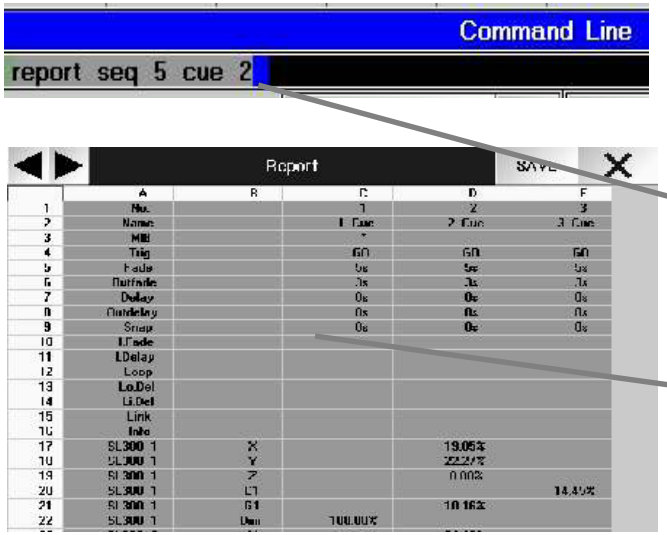
Create Info Window:

- with ***CREATE A WINDOW*** and***INFO*** an empty Info Window opens
- press ***Select*** - „Select Something“ appears
- press button or little Executor window of the relevant sequenz, chaser or effect.
- type Info text
- close Info Window



Create Info for cue:

- press EDIT
- choose a sequenz, chaser or effekt (not Bitmap Effekt)
- press Button INFO
- type Infotext



4.7 REPORT window

The REPORT function allows you to create a printed overview of sequences. An Excel file will contain all fixtures involved with their respective values sorted in&by Cues. You can also create reports for GROUP, WORLD and PRESET. In these cases, the matching fixtures and saved values will also be displayed in tables.

Open the report from the Command Line:

- - enter report_seq_(number or area of the sequence);
  - enter report_seq_(number of sequence)_(number or area of Cues);
  - enter report_group_(number or area of Groups);
  - enter report_ world_(number or area of Worlds);
  - enter report_preset_(number or area of Preset);

Only „Report“ will create reports of all Cues, sequences, Groups, Worlds - CAUTION: will produce large files.
The right display will show the view form of the report. If there are more columns available than can be shown on the display, proceed by using the **g h** buttons. If there are more lines available, scroll on using the Encoder next to the display.

With each „REPORT“ command, the previously active contents of the REPORT index will be deleted to be replaced by the chosen files.

	A	B	C	D	E	F	G	H
1	No.		1	2	3	4	5	
2	Name		1 Cue	2 Cue	3 Cue	4 Cue	5 Cue	6 Cue
3	MIB		*					
4	Trig		3s	3s	3s	3s	3s	3s
5	Fade		3s	3s	3s	3s	3s	3s
6	Outfade							
7	Delay		0s	0s	0s	0s	0s	0s
8	Outdelay		0s	0s	0s	0s	0s	0s
9	Snap		0s	0s	0s	0s	0s	0s
10	I.Fade							
11	I.Delay							
12	Loop							
13	Lo.Del							
14	Li.Del							
15	Link							
16	Info							
17	SL300 1	X	42.19%	77.34%	77.34%			
18	SL300 1	Y	16.80%	16.80%	16.80%			
19	SL300 1	Z	6.25%	6.25%	67.19%			
20	SL300 1	Dim	100.00%			100.00%		
21	SL300 1	Pan				72.66%	88.67%	96.10%
22	SL300 1	Tilt				30.08%	30.08%	30.08%
23	SL300 2	X	42.19%	77.34%	77.34%			
24	SL300 2	Y	16.80%	16.80%	16.80%			
25	SL300 2	Z	6.25%	6.25%	67.19%			
26	SL300 2	Dim	100.00%			100.00%		
27	SL300 2	Pan				72.66%	88.67%	96.10%
28	SL300 2	Tilt				30.08%	30.08%	30.08%

Setting up a FTP (File Transport Protocol) access:
Via this access, you can transfer data from the console to a PC. This way, you can take over the report on your PC and open it as an Excel table. The easiest way to save and print out reports is also via the PC. In order to do so, PC and console have to be connected to the same network, i.e. the first 3 number groups or the IP number have to be identical (e.g. 192.168.177.xxx), and the last number group has to be unique for each device logged on this network.

Saving and printing reports:
- Create the desired report (see above).
- Connect PC and console via FTP.
- Cut out the file xx.CSV in the REPORT folder of the console and paste it into a folder of on the PC. In the graphics on the left, the folder overview of the console having the IP 192.168.177.114
- Start the application MICROSOFT EXCEL and open the report file.

- Printing, saving, sending the report, etc. is as usual with Excel files.

Examples:
Create the report of Cue No. 2,3,4 and 5 of sequence 24;
- Enter the following on the CommandLine: report_sequ_24_cue_2_thru_5; confirm with ENTER

- the report will appear on the right display; the Cue values are arranged in columns, the parameters of individual fixtures in rows.

To create the reports for sequences 1,2, and 3,
- enter the following on the CommandLine: report_sequ_1_thru_3; confirm with ENTER

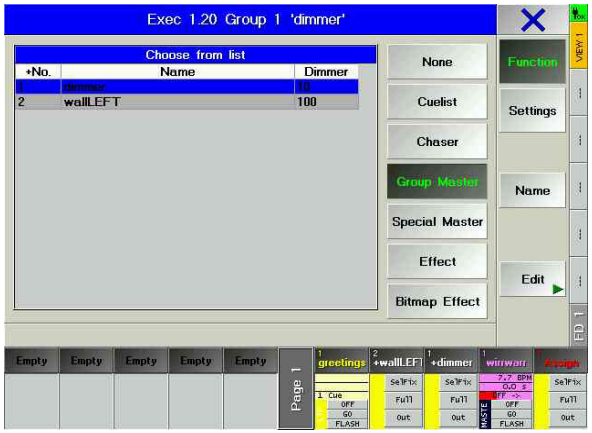
- the report for sequence 1 will appear on the right display;the Cue values are arranged in columns, the parameters of individual fixtures in rows. With the gh buttons, you can switch to the next or previous report. In the report folder, you find the 3 files containing the reports.

To create the Report PRESET 1, PAN / TILT,
- enter the following on the CommandLine: report_preset_1.1; confirm with ENTER

- the report for Preset 1, PAN/TILT will appear on the right display; the columns will display the names of the involved fixtures and the respective percentage value of PAN and TILT . Use the Encoder to scroll down, if not all rows are visible on the display.

To create the report WORLD 3, containing the names of all fixtures in World 3,
- enter the following on the CommandLine: report_world_3; confirm with ENTER

- the report for sequence 1 will appear on the right display; the Cue values are arranged in columns, the parameters of individual fixtures in rows. Use the Encoder to scroll down, if not all rows are visible on the display.



5 Executing Cues, Sequences and Chasers

5.1 ASSIGN menu (Assignment to EXECUTOR)

Cues, Sequences or Effect Groups can be assigned to any EXECUTOR fader or button.
One way to enter the ASSIGN menu is by a mouse click or using the touch screen on the title bar of the EXECUTOR FADER window.

Or:

Press the ASSIGN key once (LED is on).
Select a Sequence in the Sequence Pool, or an Effect Group in the Effect Pool.
Press the EXECUTOR FADER or EXECUTOR button, to which you want to assign a Sequence or Chaser.

Or:

Press the ASSIGN key once (LED is on).
Press the EXECUTOR FADER or EXECUTOR button, for which a Sequence or Chaser is to be created. The ASSIGN menu will appear in the middle TFT display.
Another way to enter the ASSIGN menu is via the EDIT menu.
The title bar will display the selected EXECUTOR FADER or BUTTON.

5.1.1 Assigning Sequences or Effect Groups

The “Function” key must be activated (dark background).

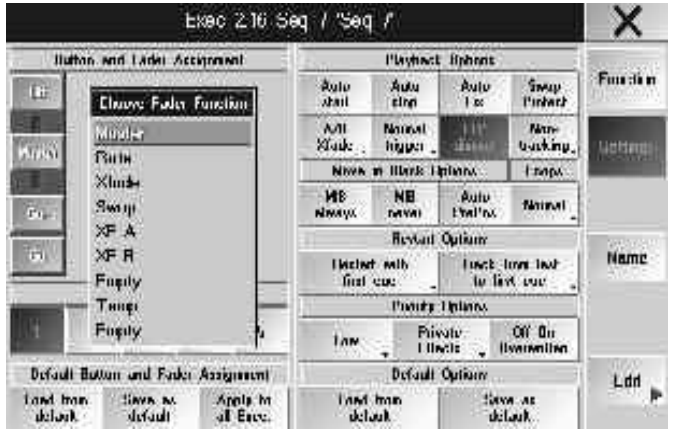
By pressing the CHASER, SEQUENCE or EFFECT key, all created Sequences will be listed in the Sheet. Select the Sequence or Effect Group to be assigned. Assigned Sequences or Effect Groups are displayed in red.
The CUES column shows the number of Cues in the individual Sequences.
By pressing the key “Edit“, you can customize the assigned Sequence or Effect Group in the EDIT menu.
4.3 or **4.4** Editing Cues, Sequences or Chasers. **6.2** Editing Effect Groups

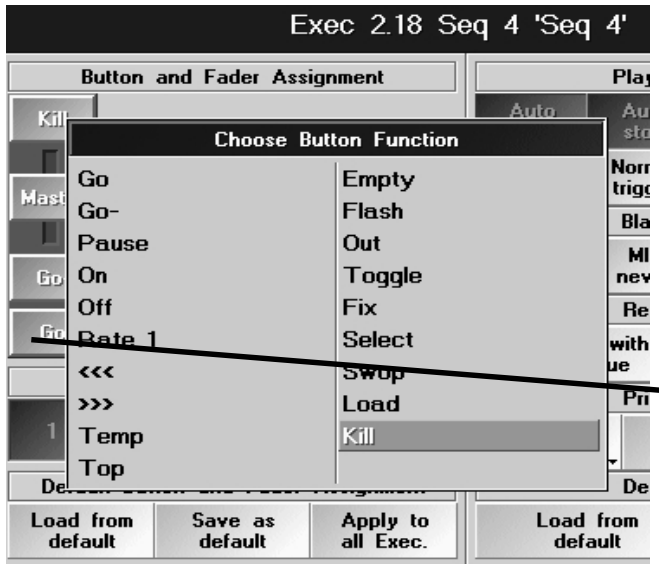
5.1.2 Changing Sequence Names

- By pushing the key “Name“ the a sequence can be renamed using the keyboard.

or:

- Push ASSIGN key 2x (LED is on).
- Push the executor button, where the name of the sequence should be changed.
- A window appears, where you can now enter the new name.





5.1.3 Changing Button and Fader Functions

- press ***ASSIGN***
- press small executor window
- press ***FUNCTION***
- press ***SETTINGS***
- When touch on the FADER symbol key, a selection will appear where you can assign the respective function to the Fader by another touch.

- Master: The Fader controls all programmed dimmer values of this Sequence.
- Swap: With the Fader, HTP channels in the sequence can be faded in and **all** other HTP values not used in this sequence are set to "0"

It is only possible to use the SWAP or Master fader.

- ***FADE***: With the Fader, the fade-in time between cues can be set manually, when using Chasers.
- ***Speed***: Chaser speed can be set with the Fader.
- ***Xfade***: With the Fader, you can manually crossfade all parameters in to the next cue of the sequence.
- ***XF A:*** If Split Crossfade is active, you can fade out the Cue that is currently playing back when pushing the fader upwards or downwards.

If Split Crossfade is **not active**, you can fade out to the darkening Dimmer channels of the next Cue when pushing the fader upwards or downwards.

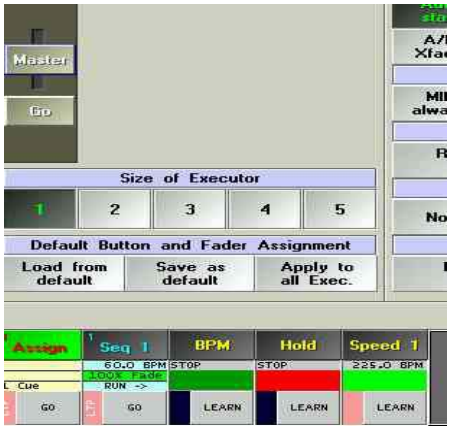
- ***XF B***: If Split Crossfade is active, you can use the Fader to fade in the next Cue when pushing the fader upwards or downwards.

If Split Crossfade is **not active**, you can fade out to the next Cue and to the brightening Dimmer channels when pushing the fader upwards or downwards.

- ***Empty***: Fader has no function.
- ***Rate***: Using the Fader, you can change all fade and delay times for sequences. If the fader is at 50%, all times will be executed in the normal way. Using the RATE 1 button, you can automatically set the Fader back to the 50% position.
- ***MFade***: This fader controls master in & outfade in a range from 0 to 10 seconds. It is used when starting or switching off the running chase. With the encoder the „master fade" can be set to "DEFAULT". In this position the predefined MFade from the menu setup/defaults/playback timing will be used.
- ***Temp***: Use the Fader to temporarily fade in the first Cue(step), then, the previous status will be restored, similar to the „Temp" key.

By a touch on the respective KEY symbol, a selection will appear in which any button can be allocated with different functions.

- ***Go***: The cue will be played back with all programmed FADE and DELAY times.
- ***Go–***: For sequences, the previous cue is played back and all changes are executed (full tracking) using all programmed FADE and DELAY times. For Chasers, the running direction will be reversed.
- ***Pause***: A running cue or a Chaser will be temporarily stopped. To continue use GO+ or GO–.
- ***On***: Reasserts the priority of the Executor making it the latest action thus overriding other executors which were



Micro - Assignment Menu; only one button can assingned here

previously overriding it (LTP).
- ***Off***: Switches the Executor off so that it no longer outputting cue data to stage.
- ***Rate 1***: Puts the RATE FADER to 50% position (**RATE Fader**).
- ***Learn***: Direct entering of the Chaser speed. When pressing this button at least three times, the Chaser speed is set.
- ***<<<:*** Playback of the previous cue without FADE or SNAP times.
- ***>>>:*** Playback of the next cue without FADE or SNAP times.
- ***Temp***: A Cue or chaser plays back as long as the button is pressed. Upon releasing the button, previous condition will be restored.
- ***Top***: Resets the Sequence to the first cue.
- ***Empty***: Button has no function.
- ***Flash***: Sets the Dimmer channels in the current cue to 100% of their programmed value. Starts the sequence, if not already activated.
- ***Out***: Sets the Dimmer channels in the current cue to 0% of their programmed value. Starts the sequence, if not already activated..
- ***Toggle***: To switch on and off the Sequence or Chaser.
- ***Fix***: Will fix sequence or chaser on this executor, even when switching PAGES here (this will be displayed by an orange background in the small EXECUTOR window).
- ***Load***: Pressing the button on the right TFT display will open a chart for this sequence where you can select and directly load the next cue to be played back in the sequence (LOAD CUE). Start the cue using the GO button.
- ***Select***: Makes this executor the Master Sequence.
- ***Swop***: As long as the button is pushed all other dimmer channels are faded out, except with executors, where „Swop Protected“ has been activated.
- ***Kill***: Has the same function as GO, but will switch off all running Executors.

With the Size of Executor buttons 1 – 5, you can define how many faders and buttons are available for controlling your sequence on EXECUTOR FADERs, and whether one to five buttons could be used for EXECUTOR BUTTONS.
The respective titles will be displayed on the TFT display above the EXECUTOR FADERS. When the LIST function is active, the function of the EXECUTOR buttons will be displayed above these buttons (press LIST key).

Default Button and Fader Assignment

- Pressing the “Save as default“ key will store the current settings as default settings in the Default Button/Fader menu. For each option (1-5 Faders or 1-5 Buttons, Sequences or Chasers), there is a default that can be stored.
- Pressing the “Load from default“ key will load the stored default settings and use them for this Executor.
- Pressing the “Apply to all Exec“ will overwrite ***all*** Fader or Button Executors. The prerequisite is, however, an

identical number of Fader and Button assignments.

5.1.4 Playback Options

● The “Settings“ key must be pressed (dark background).

If you press the “Auto start“ key (background dark gray), the Sequence or Chaser will be automatically started when pushing the Master Fader upwards (item 6).

If the “Auto stop“ key is pressed (dark gray background), the sequence or Chaser will automatically be switched off when pushing the master fader downwards to the lower stop.

If ***„Auto start“*** is active (dark background) and ***„Auto Stop“*** is not active, the fader gets the function „***Auto On***“, this means that when the fader is moved up wards from 0-position, simultanously the function „On“ is activated and the sequence is reactivated.

If the “Auto Fix“ key is pressed (dark background) and the Sequence or Chaser is started, this Executor will be locked to that position when switching the Executor pages and will **only be released when it is switched off**. If an Executor is stored at that position on another page, this Executor will appear and can be used again only after switching the locked Executor off.

If the “Swop Protected” key is pressed, the Dimmers of this Sequence will not be switched off, when ***another*** Sequence is called up using Swop.

If the TRACKING key is pressed (dark background), the Sequence will be executed in Tracking mode. If the key is not pressed, the Sequence will be executed in Non Tracking mode.

The **TRACKING** mode is normally used for **theatre applications**.

Values that were played back in a Cue, remain unchanged for each susequent Cue, until they are modified or overwritten by a later Cue (LTP principle). Therefore, you do not have to program values which do not change into later cues.

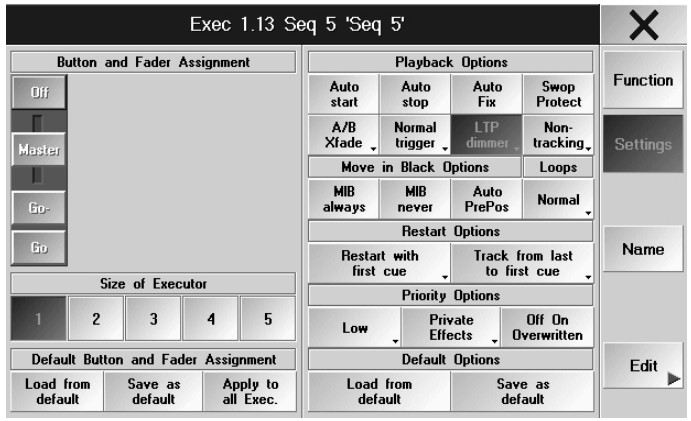
TIPP

Example: At the beginning of a Sequence, Dimmer channels are set to 80%. Let’s assume that the setting is to be used for several cues. As long as the channels are not modified, they will remain at 80%. When working with this Sequence, you may recognize, however, that the channel setting should only be at 70%. Now, you only have to change this channel setting **once**; all subsequent Cues will automatically be “modified” to 70%.

Example: Cue 10 is made up of the changes programed in cue 10 as well all the changes in cues1 thru 9 with the later values taking presedence over the earlier values - Latest Takes Presedence (LTP)

In **NON TRACKING** mode values will return to their defaults unless they are specifcally given a value in that cue.

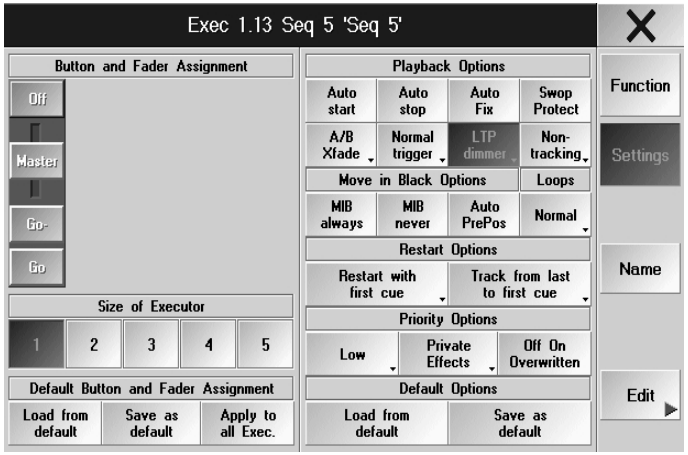
Example: Cue 10 is made up of only the information in Cue 10. Modications to earlier cues will have no effect on later cues. Essentially cues no longer have a relationship between each other. **5.4** TRACKING window

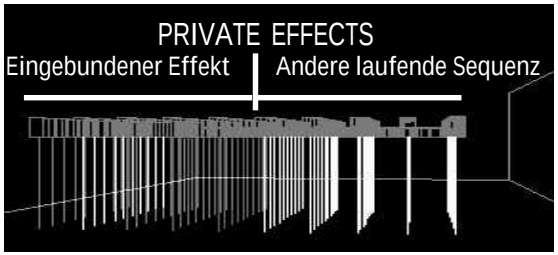


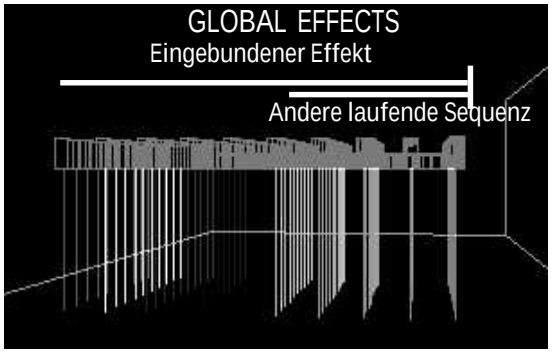
Key A/B or Split Xfade: If the “Split Xfade” key is pressed (displayed in dark), this function is active (**item 5.1.3** Changing Faders, Fader XF A and XF B).

Key Normal trigger If the „Normal Trigger“ key is pressed, this Sequence/Chaser will be execute with the programmed triggers calls. Pressing this key, it will switch to „Trigger is GO“, where after the Sequence/Chaser can only be controlled by the GO button and will ignore Follow, Sound and trigger times.

LTP Dimmers key pressed: When playing back this sequence, dimmer channels programmed into this sequence will override all other (LTP Dimmer) instances of these channels being played back, regardless of level. They will







overwrite all other dimmer channels of those Cues that were also called up in LTP mode. HTP Executors remain unchanged.

Move in Black Options

MIB Always key pressed: Cues in which fixture intensity changes from zero and also change other parameters , for example, a different position, color or gobo, etc., will have these values "preset" so that live changes will not be seen on stage. You can also set a FADE or DELAY time for these channels (**2.13** Settings in the Defaults Menu / Playback Timing).

MIB Never key pressed: Cues which have separatly activated cues MIB fuctions are completely switched off (**4.3** Edit Sequences).

Auto PrePos key pressed: The automatic prepositioning system will perform a move in black upon executor start. Therefore all non-dimmer channels come up with zero fadetime and delay if the corresponding fixture was dark when the executor was started. Switching off an executor with the Auto PrePos function enabled, tries not to destroy the "stage look", only dimmer channels are fading out.

When deactivating this sequence, the channels will be altered only after the respective dimmer has been set to 0.

LOOPS

NORMAL: use the GO command to execute the next Cue within the LOOP

breaking GO: use the GO command to cancel the LOOP and to execute the next Cue of the sequence

RESTART OPTIONS

If the "Restart with first cue" key is pressed, the Sequence will restart always with the **first** cue.

If the "Restart with actual cue" key is pressed, the Sequence will restart exactly where it was switched off the last time.

If the "Restart with next cue" key is pressed, the Sequence will restart one cue after where it was switched off.

If the "Release from last to first cue" key is pressed, tracked values are released when the executor jumps back to the first cue.

PRIORITY OPTIONS

There are 3 priorities: Low (lowest), Normal (middle) and High(highest). Executors having a higher priority, cannot be overwritten by Executors of a lower priority. In general, this applies only for LTP functions.

PRIVATE EFFECTS: Effects saved in this sequence will only use channels that are not used by other sequences. So, in some cases the effect may not be executed completely as no overlaps are allowed. (upper graphics)

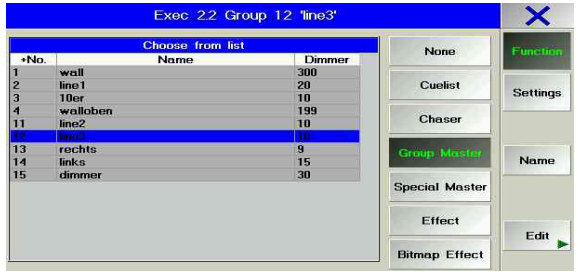
GLOBAL EFFECTS: Effects saved in this sequence will use all channels, even if they overlap with other sequences. (lower graphics)

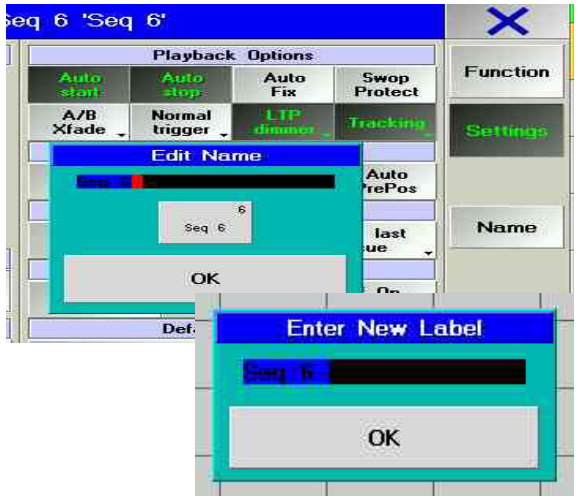
For **LTP** Executors, you can choose **Off On Overwritten** additionally. When all functions of this Executor have been overwritten by other Executors, this one will switch off.

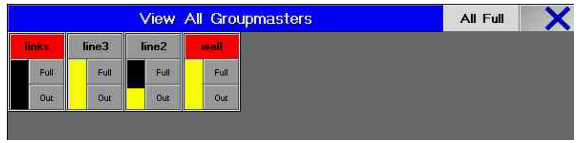
Defaults Options

Pressing the SAVE AS DEFAULT key will save the current settings as default settings.

Pressing the LOAD FROM DEFAULT key will load the saved default settings and use them for this Executor.







5.1.5 Assigning Group Masters

Group masters are Faders only assigned to one group previously defined. Group masters do not have an influence on the effects produced by the GrandMaster.

- select group in ***GROUP***-Pool.
- press empty EXECUTOR FADER-button

or: open ASSIGN-Menu of the related Executor

- ***press FUNCTION***
- ***press GROUP MASTER***
- select group

Changing Group Names

ASSIGN

- By pushing the key “Name“ the name of the group assigned to the executor can be changed by using the keyboard.

or:
Push the ASSIGN key 2x (LED is on).
Push the executor button, where the name of the group should be changed.
A window appears, where you can now enter the new name.
or:
in Group Pool **3.3** Creating and calling up Fixtures and Dimmer GROUPS

***Submaster Options*:**

- The “Settings“ key must be pressed (dark background).

If the POSITIVE ENABLE key is pressed, this Group Master is the Master Fader for all dimmer channels of this group.

If a Group Master is set as INHIBIT Master (NEGATIVE INHIBIT key is pressed) for a group that includes Fixtures or dimmer channels from other groups, this INHIBIT Master must also be pushed up, to be able to use the overlapping channels. The INHIBIT Master has priority over other group masters and can also be used as Master Fader for all other Group Masters.

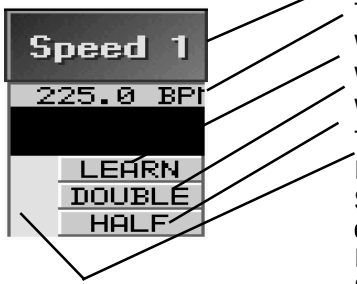
Group Overview:

- Pressing the GROUP key twice will open an overview in the right display showing all assigned Group Masters. In this overview, every Group Master is displayed with a separate small window.
  - The top key contains the group name. Clicking on this key will open the Page on which it is stored. The display above the Fader shows „HERE“.
  - With the FULL key, you can set the Master to 100%. With the OUT key, you can set the Master to „0“. The yellow status indicator next to the keys will give you the currently set value for the respective Fader.
- Pressing the ALL FULL key in the title bar will set all group masters to 100%.
- Pressing the CLOSE key will close this window.

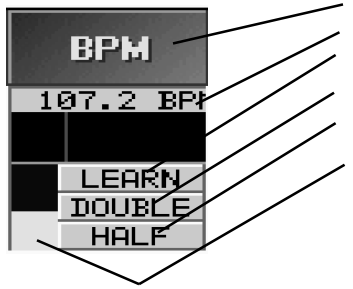
5.1.6Assigning Special Masters

- Press the ASSIGN key once (LED is on).
- Press an EXECUTOR FADER button, to which a Special Master is to be assigned to.
- Press FUNCTION
- If the SPECIAL MASTER key is pressed, all CHASER SPEED Masters will be displayed.
- Select which SPEED is to be assigned.

The following window will appear above the assigned Executor fader:



The name of the Speed Group.
The speed.
With the top button, you can enter a speed directly. By pressing the button at least twice, you can set the speed.
With the button below the fader, you can double the speed.
With the bottom button, you can halve the speed.
The speed of the Speed Group can be adjusted by using the Fader.
If **SOUND : BPM** is selected, you can adjust the given BPM value in the Sound menu using the fader (**2.14** Sound Signal Settings). The Sound Menu will open by touching the lower part of this window (not the headline).
or:
If **SOUND : HOLD** is selected, you can adjust the given HOLD value in the Sound menu using the fader (**2.14** Sound Signal Settings). The Sound Menu will open by touching the lower part of this window (not the headline).



The name of the fader function.
The speed.
With the top button, you can enter a speed directly. By pressing the button at least twice you can set the speed.
With the button below the fader you can double the speed.
With the bottom button you can halve the speed.
You can adjust the BPM / HOLD value with the fader.

- ***GRANDMASTER:*** this will assign the Grandmaster function to this Fader.
- ***MASTER EXEC FADE:*** this will assign the Executor Fader function to this Fader.
- ***MASTER PRESET FADE:*** this will assign the Preset Fader function to this Fader.

Executor Fader having these 3 functions, will always run synchronized to the console faders. The BLACKOUT, SET TIME, and MANUAL FADE buttons will also affect all Faders having these functions.

5.1.7Assigning effects

- press ***ASSIGN***
- press on the small Executor window
- press ***FUNCTION***
- press ***EFFECT***
- use the Encoder to select the effect and confirm by pressing on the Encoder

5.1.8 Assigning BITMAP EFFECTS

- press ***ASSIGN***
- press on the small Executor window
- press ***FUNCTION***
- press ***BITMAP EFFECTS***
- use the Encoder to select the effect and confirm by pressing on the Encoder
- if needed, set the button and fader functions **5.1.3**

5.1.9 Moving, copying or deleting Executors

- Press the MOVE key once to move Executors (LED is on).

Or:

- Press the COPY key once to copy Executors (LED is on).Press the DELETE key once to delete Executors (LED is on).
- To move or copy an Executor button or a window above the Executor, press or click on it once.
- Pressing another Executor button or window above the Executor will set the new position.
- Press an Executor button or on a window above the Executor once.

If there are programmed Macros or Timecode Shows, in which the moved or deleted Executors were to be used, these assignments may no longer work! .

5.2 Small EXECUTOR Window

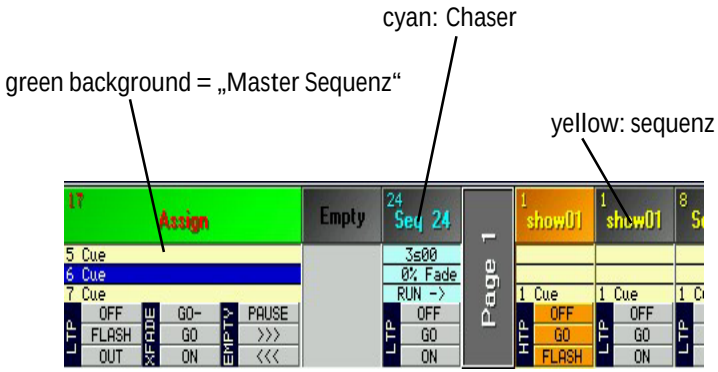
grandMA:

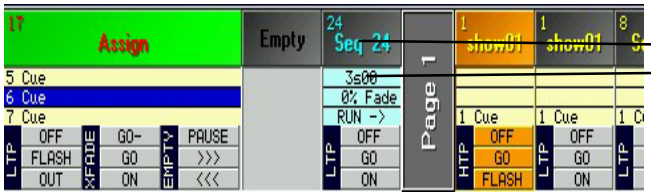
These windows are located above every EXECUTOR FADER or, after pressing the LIST key twice, in the right TFT display for the EXECUTOR buttons.

***grandMA* light, ultra-light and Micro:**

After pressing the LIST FADERS key, these windows will be displayed above each of the EXECUTOR FADERS.
After pressing the LIST KEYS key twice, they will be displayed on the TFT display for the EXECUTOR buttons.
The name of the assigned sequence is displayed in the headline. The shown figure displays the number of the sequence.
Touching the **Sheet** (not the header) on the touch screen or using the left mouse key will open the EDIT menu. **4.3** Editing Sequences or **4.4** Editing Chasers
Touching the **title bar** on the touchscreen or using the left mouse key will open the ASSIGN menu. **5.1** ASSIGN menu
The current section from the Cue Sheet will also be displayed:

Sequence: The Outfade time of the last Cue will be displayed by a blue bar in the upper cell.
The Infade time of the cue will be displayed in the second cell.
The next Cue will be displayed in the next cell below.





Chaser:
The speed will be displayed in the upper cell.
The Fade time in percentage will be displayed in the second cell and also as a green bar.
Whilst the Chaser is not activated, you will find the type of activation in the bottom line. During execution, the number of Cues that have completed will be displayed on the left while on the right side you will see the total number of all Cues, which is also being displayed graphically by a bar.
The individual Fader and Button functions are displayed here:
- On the left side, the function of the fader is displayed. The yellow status indicator will give you the current fader level.
- The function for the button above the fader is displayed at the top.
- The function of the button below the Fader is displayed in the middle cell.
- The function of the lower button below the Fader is displayed in the lower cell.

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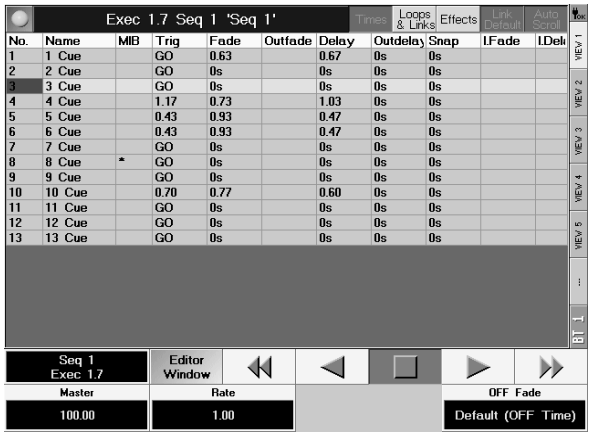
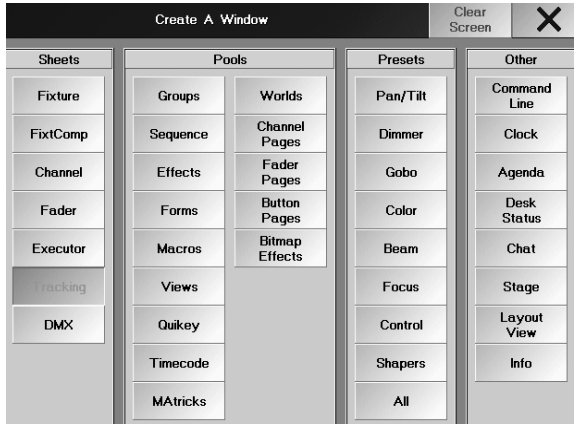
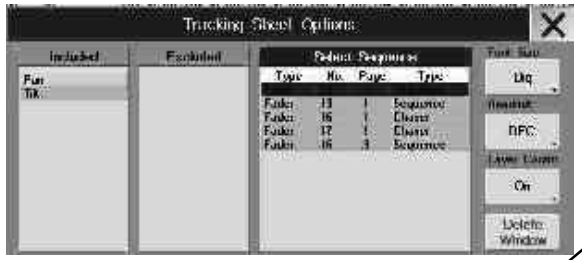
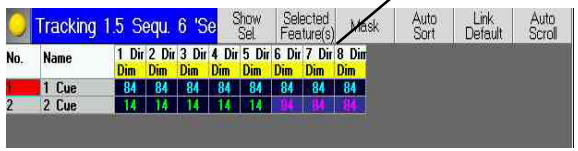
5.3 EXECUTOR Sheet

In the EXECUTOR sheet, you can see the sequence assigned to a FADER or BUTTON while allowing you to perform modications to cues and cue data. **3.1** Creating a window
Touch the left corner of the title bar you can open the EXECUTOR SHEET OPTIONS window.
In this options window, you can select which Sequence is assigned to the executor by clicking on it. With the FONT SIZE key, you can toggle the font size used in the EXECUTOR sheet between Huge, Big and Small. With the DELETE WINDOW key, you can delete the Executor sheet or close the Options window using the CLOSE key.
In the EXECUTOR sheet, you can watch the progress of the sequence; the currently playing back Cue will be displayed by a yellow background.
You can modify the MASTER fader using the left Encoder or by pressing the button above it.
Using the „RATE FACTOR“ Encoder, you can temporarily adjust all FADE and DELAY times. If the Sequence is switched off, the RATE FACTOR will automatically be reset to 1.
You can set the time to be used when switching off (OFF key) using the right Encoder or by pressing the button above it. If Default is displayed, the default time will be used **2.13** Default Menu
Using the “Arrow right“ or “Arrow left“ buttons, you can call up the next or previous Cue. With the double arrow, you can call up the previous or next Cue without any FADE or Delay times. With the STOP button, you can switch off this sequence.
By pressing the Edit Window button, you open the assigned sequence in the Edit menu. **4.3** Editing Sequences
If the LOOPS key is pressed, the programmed jumps and commands will be displayed in the Sheet. If the EFFECTS key is pressed, the calls of the Effect Groups are displayed. **4.3** Editing Sequences
If the LINK DEFAULT key of the title bar is pressed, the default sequence will automatically be transferred to the EXECUTOR window when changing the default sequence. (Assigning the Default sequence **1.9** Layout and Controls (items 9 and 10))
If you press the AUTO SCROLL key, the Sheet will be automatically moved upwards/downwards when working with larger Sequences.


Exec 1.7 Seq 1 'Seq 1'
Times
Loops & Links
Effects
Link Default
Auto Scrol
No. Name MIB Trig Fade Outfade Delay Outdelay Snap LFade LDel
1 1 Cue GO 0.63 0.67 0s 0s
2 2 Cue GO 0s 0s 0s 0s
3 3 Cue GO 0s 0s 0s 0s
4 4 Cue 1.17 0.73 1.03 0s 0s
5 5 Cue 0.43 0.93 0.47 0s 0s
6 6 Cue 0.43 0.93 0.47 0s 0s
7 7 Cue GO 0s 0s 0s 0s
8 8 Cue * GO 0s 0s 0s 0s
9 9 Cue GO 0s 0s 0s 0s
10 10 Cue 0.70 0.77 0.60 0s 0s
11 11 Cue GO 0s 0s 0s 0s
12 12 Cue GO 0s 0s 0s 0s
13 13 Cue GO 0s 0s 0s 0s
VIEW 1
VIEW 2
VIEW 3
VIEW 4
VIEW 5
BT 1
Seq 1
Exec 1.7
Editor Window
Master
100.00
Rate
1.00
OFF Fade
Default (OFF Time)







5.4 TRACKING Sheet

In the Tracking sheet, all values and times/durations of a Sequence can be displayed and modified.
Create a Tracking Sheet. **3.1** Creating windows

● Touch the left corner of the title bar, you can open the TRACKING SHEET OPTIONS window.

● In this window, you can select sequences to be displayed in the Tracking sheet by clicking on them.

In the INCLUDED Sheet, all of the parameters of the Fixtures used in this Sequence are displayed. By clicking on a parameter, you can move it into the EXCLUDED sheet. Parameters displayed in this Sheet will **not** be displayed in this Tracking Sheet. With this function, you obtain a better overview for the Tracking Sheet when pressing the MASK key.

With the FONT SIZE key, you can switch the font size used in this window between LARGE and SMALL.

By pressing the % key (DEC or HEX) you can switch the display of values between percent, decimal or hexadecimal values.

With the DELETE WINDOW key, you can delete the Executor window or close the OPTIONS window using the X key.

In this window, you can watch the progress of the sequence; the currently playing back Cue will be displayed by a yellow background.

Colour codes used in the tracksheet:

Text CYAN: New values or values that have changed in this cue.
Text MAGENTA: Tracked values; these will not change in the next Cue and are not stored
Text GREEN: Downfading dimmer values
Text RED: "Blocked" values.

- Button ***TIME*** = FADE / DELAY times will be displayed

If the FIX key is pressed (dark background), all **selected** Fixture parameters will be displayed first in the Sheet. If the key is not pressed (indicated by a CHA), the Sheet will display all functions **regardless of their selections**. When selecting presets, the Fixtures/Dimmers will be sorted accordingly in the Tracking Sheet.

If the MASK key is pressed, the INCLUDED/EXCLUDED functions will be activated in the OPTIONS menu.

If the SORT key is pressed (dark appearance), the Fixtures/Dimmers will be sorted by selection and parameter. When selecting groups or presets, the Fixtures/Dimmers will be sorted accordingly in the Tracking Sheet.

If the LINK DEFAULT key of the title bar is pressed, the default sequence will automatically be transferred to the EXECUTOR window when changing the default sequence. (Assigning the Default sequence **1.9** Layout and Controls (items 9 and 10))

If the AUTO SCROLL key is pressed, the Sheet will be automatically moved upwards/downwards when working with larger Sequences.

Using the left mouse key, you can select values or times/durations (also by using the "lasso function"). Values and times/durations can be modified using the middle mouse key. If you click and drag with the left mouse key and then click with the middle button on the selected values, a window will open where you can enter values directly.

To modify presets, must make a middle mouse click on the preset. A window will open where you can enter values or load other presets direclty.

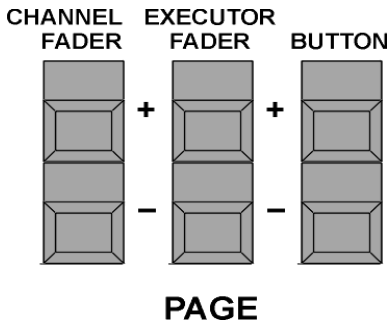
This is one of the few menus where using the mouse is the only method that makes sense.

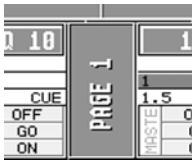
The following window will open if you make a right mouse click on a selected value.

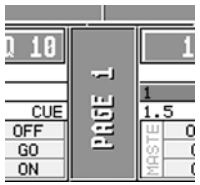
Use this window in the following manor:

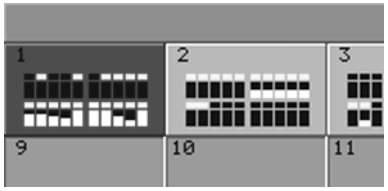
1. Select one or more cells in the Tracking Sheet
2. Choose the DELETE, CUE ONLY, UNBLOCK or BLOCK command
3. Execute the command by choosing the source (Selection, All Channels of Selected Cues, Complete or Selected Channels for All Cues).

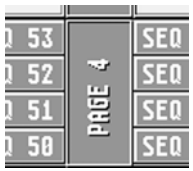
- ***DELETE***: Will remove all values.
- ***CUE ONLY:*** Will copy the values of the previous step into the following step (that step must be empty).
- ***BLOCK***: With BLOCK, tracking values (magenta) can be converted into “stored values”. Theses values will be displayed in red.
- ***UNBLOCK***: Converts blocked / stored values to tracking values (magenta).

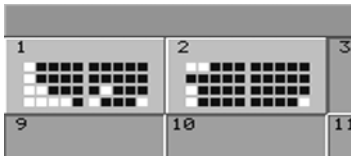












5.5 Page Administration

If you are in Channel Mode, the name of the currently accessible PAGE of channel faders appears on the touchscreens between the small channel windows above your faders. **3.5.1** CHANNEL Mode.
If you are in Executor Mode, the name of the currently accessible PAGE of executor faders appears on the touchscreens between the small executor windows above your faders
After pressing the LIST key once, the currently accessible PAGE of EXECUTOR BUTTONS appears at the bottom of the right display including the name between the small executor windows.
Using the PAGE + & - keys you can open the access PAGES. Remember all pages output at once so changing page so no effect on playback, only on what you currently have access to.
Or:
Hold a PAGE button down, for which another is to be called up. While holding down a button, the EXECUTOR Button LEDs will indicate the current PAGE you are on (Example: If LED 28 is flashing, PAGE 8 is selected). By pressing another button you can switch to a different PAGE.

5.5.1 Channel Page

When pressing both PAGE keys of the Channel Mode simultaneously the display will show a summary of the CHANNEL PAGES.
Or:
If in Channel Mode, you can call up the summary for all Channel Pages by pressing the PAGE Keys in the display. By clicking on the respective PAGE Keys you can call up the PAGE.

5.5.2 Executor Fader Page

When pressing both PAGE keys for the Executor Faders simultaneously the display will show a summary of the Executor Fader Pages.
Or:
If in EXECUTOR FADER Mode, you can call up the summary for all EXECUTOR FADER Pages by pressing the PAGE Keys in the display. By clicking on a PAGE Key you can call up the respective PAGE.
The individual Faders are indicated by symbols in the respective PAGE Keys. The yellow bar graph will give you the currently set value for the respective Fader. If there is a green square above the Fader symbol, a Sequence, a Group or a Special Master is allocated to this Executor Fader. If this square is yellow, the Sequence or Chaser is active.

5.5.3 Executor Button Page

When pressing both PAGE keys for the Executor Buttons simultaneously the display will show a summary of the EXECUTOR BUTTON Pages.
Or:
After pressing the LIST key once, the TFT display will show a listing of the Sequences assigned to the Buttons, and in the middle a PAGE Key with the currently called-up EXECUTOR Page.
You can call up the summary for all EXECUTOR BUTTON Pages by pressing the PAGE keys in the display. By clicking on a PAGE key you can call up the respective PAGE.
The keys are indicated by symbols in the respective PAGE keys. If there is a green square, a Sequence, a Group or a Special Master is allocated to this Executor Button. If this square is yellow, the Sequence or Chaser is active.

5.5.4 Edit PAGE Name

- Press the EDIT key once.
- Select the PAGE key on the display.
- The EDIT NAME window will open. Enter a name using the keyboard and confirm with ENTER.

5.5.5 Copying, moving and deleting Pages

Copy or move a Page containing the Executor faders *or* buttons

Press the COPY key once to copy Pages (LED is on).

Or:

Press the MOVE key once to move Pages (LED is on).
Press the PAGE key once (LED is on).
„**2**“ for Executor fader or „**3**“ for Executor buttons (enter via numeric keypad).
Press the „**.**“-(dot) key and then enter the page number.
Press the AT key (LED is on), enter the number of the target Page and confirm with ENTER.

Copy or move complete Pages with Executor-Faders *and* buttons

Press the COPY key once to copy Pages (LED is on).

Or:

Press the MOVE key once to move Pages (LED is on).
Press the PAGE key once (LED is on).
Enter the page number.
Press the AT key (LED is on), enter the number of the target Page and confirm with ENTER.

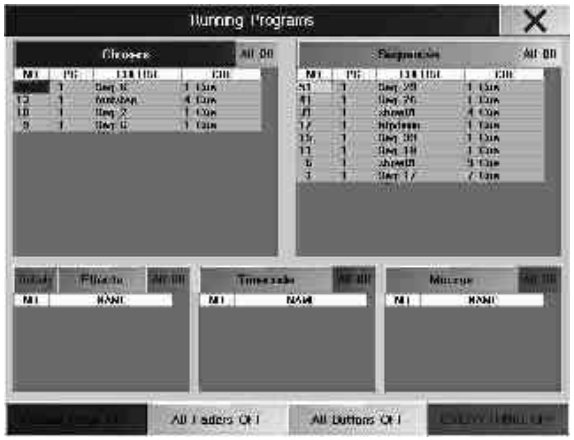
Delete Pages with Executor faders *or* buttons

Press the DELETE key once to delete Pages (LED is on).
Press the PAGE key once (LED is on).
„**2**“ for Executor fader or „**3**“ for Executor buttons (enter via numeric keypad).
Press the „**.**“-(dot) key and then the page number; confirm with ENTER.
A window will open; here, confirm the deleting operation with the DELETE key.

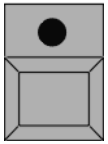
Deleting Pages with Executor fader *and* buttons

Press the DELETE key once to delete Pages (LED is on).
Press the PAGE key once (LED is on).
Enter the page number on the keypad and confirm with ENTER.
A window will open; here, confirm the deleting operation with the DELETE key.

If there are programmed Macros or Timecode Shows, in which the moved or deleted Pages were to be used, these assignments may no longer work!



OFF



5.6 OFF menu (RUNNING PROGRAMS)

Pressing the OFF key twice will open the RUNNING PROGRAMS window.
All active chasers, sequences, effect groups, timecode shows and Macros are displayed here.
- ***CHASES ALL OFF:*** Switches off **all** (!) active CHASERS.
- ***SEQUENCES ALL OFF:*** Switches off **all** (!) active SEQUENCES.
- ***EFFECTS ALL OFF***: Switches off **all** (!) active EFFECTS.
- ***TIMECODE ALL OFF***: Switches off **all** (!) active TIMECODE SHOWS.
- ***MACROS ALL OFF***: Switches off **all** (!) active MACROS.

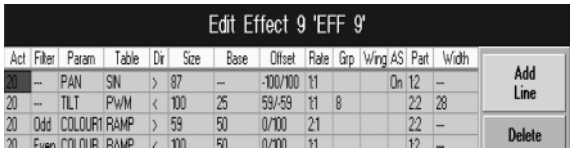
Pressing the ***DETAILS*** key will open the View ALL RUNNING EFFECTS menu. ***6.6*** View ALL RUNNING EFFECTS menu
- ***CURRENT PAGE OFF***: Switches off **all** (!) Executors of the current Page
- ***ALL FADERS OFF***: Switches off **all** (!) active EXECUTOR Faders.
- ***ALL BUTTONS OFF***: Switches off **all** (!) active EXECUTOR buttons.
- ***EVERYTHING OFF***: Switches off **all** (!) EXECUTORS.
- ***CLOSE***: Will close this window.

You can also switch off Executors or Pages directly.
e.g.: – [OFF key] [EXECUTOR button] [3] [TIME key] [2] [Enter]
– [OFFkey] [PAGE key] [3] [TIME key] [2] [Enter]

Fixtures or Groups can be released (knocked out) from direct access.
e.g.: – [OFF key] [FIXTURE key] [3] [Enter]
– [OFF key] [GROUP key] [3] [Enter]

● Keep OFF button pressed, then press

- GO+	switches off everything (compare with EVERTHING OFF)
- EXECUTOR	all executors are switched off
- EFFECT	all running effects are switched off
- MACRO	all running macros are switched off



6 Effects

6.1 Effect Pool

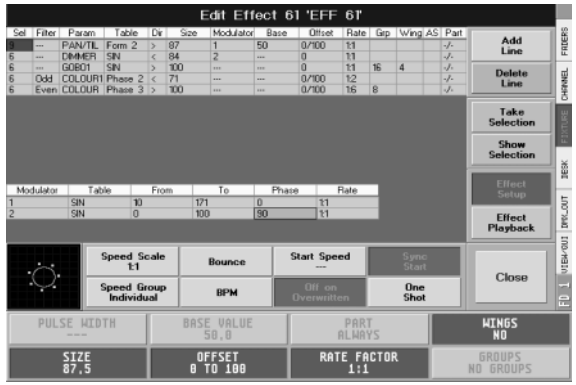
In the Effect Pool, you can create up to 900 different Effect groups. In the individual Effects groups, different Effects and functions can be combined and matched to each other.
For PAN/TILT values, self-created two-dimensional forms can be played back and adjusted. **6.7** Creating and storing virtual forms
The individual Effect Groups can be subdivided into **four** different types:
- Effect Group **with** assigned Fixtures or Dimmers (key of the Effect Group is displayed in pink) - a specific effect
- Effect Group **without** assigned Fixtures or Dimmers (key of the Effect Group is displayed in red)- a generic effect
- Temporary Effect Group (keys displayed in blue in the ALL RUNNING EFFECTS menu). If this Effect Group is not stored after having been created, it will automatically be deleted after it is switched off.
- Sequence Effect Group (Effect Group key displayed in orange). A specific copy of a generic effect that has been created automatically because a generic effect has been used when creating a cue

6.1.1 Creating an Effect Group

Create an EFFECT window. ***3.1*** Creating windows
● Select the Fixtures or Dimmers, for which an effect is to be used (selected Fixtures/Dimmers are indicated by yellow characters).
● Choose an empty Effect Group. New keys and Encoder names are displayed above the encoders. Pressing the ***EDIT key*** for this Effect Group will open the EDIT EFFECT menu in the right TFT display.

Or:

● Pressing the ADD LINE key once will open the SELECT PARAMETER window. Now, select a function (e.g. PAN). After selecting a function, the SELECT TABLE window will open, where you can select an Effect for the chosen function.
- ***PWM***: Pulse width modulation
- ***RANDOM***: Random fade-ins of individual channels of the selected function
- ***CHASE***: sequential flash to 100% function
- ***SIN***: Sinus function
- ***COS***: Co-sinus function
- ***LIN+***: Saw tooth ascending
- ***LIN–:*** Saw tooth descending
- ***TRIANGLE***: Triangle function
- ***PHASE1/PHASE2/PHASE3***: Normally used to create rainbow color effects on fixtures with color mixing. Each of the phases is exactly out of phase with the other. This allows for an even and offset application across 3 parameters.
- By pressing the USER DEFINED key (turns dark gray), user-created two-dimensional forms can be selected for the PAN/TILT function. If a form is to be created or modified, press the NEW or EDIT key to open the EDIT FORMS menu. **6.7** Creating and storing virtual forms



In order to assign further Effects to the selected Fixtures/Dimmers in this group, press the Add Line key again. A new line will be displayed and the Select Parameter window will open. Choose a function now and assign an Effect.

Up to 16 individual Effects can be combined within a Group.uss Edit key (LED on) and a key in the Effect Pool. The EDIT EFFECT menu will appear in the right TFT display

6.2 Editing Effect Groups

When choosing an Effect Group from the Effect Pool, respective keys will be displayed above the Encoders. Pressing the **EDIT key** for this Effect Group will open the EDIT EFFECT menu.

Or:

Push Edit key (LED on) and a key in the Effect Pool. The EDIT EFFECT menu will appear in the right TFT display.

6.2.1 Editing Effects

In the title bar, the Effect Group to be modified will be displayed with its number and name. In the second line, the column functions are listed:

- ***Sel (Selection):*** Displays the numbers of Fixtures or Dimmers assigned to this Effect. If the Fixtures' or Dimmers' assignments are to be modified for an Effect, it has to be selected, this will be indicated by a red background.

Pressing the SHOW SELECTION key once will select the assigned Fixtures and Dimmers (displayed in yellow).

Select those Fixtures and/or Dimmers (will be displayed in yellow) that are to be assigned to this Effect. Now, ress the TAKE SELECTION key once. The new number of Fixtures and Dimmers will now be inserted and adopted. If an generic Effect Group is to be created (thats one without any selection which can then be used with any selection), do ***not*** select any Fixtures or Dimmers, but press the TAKE SELECTION key once. The cell will now display a "Zero". The key of this Effect Group will be indicated in red in the Effect Pool.

- ***Filter***: Here, a filter can be set that limits the execution of the Effect either to the odd-numbered or to the even-numbered Fixtures. To assign a filter, select the cell. Press the Encoder right of the display once. The SELECT FILTER window will open, where you can select a filter for this Effect.
- ***Param (Parameter):*** Display of the assigned parameter for which the Effect has an influence over. To change which parameter, select the cell and press the Encoder to the right of the display once. The SELECT PARAMETER window will open, where you can select a different parameter for this Effect.
- ***Table***: Here, the assigned Effect is indicated with its name.
  To re-assign an Effect, select the cell. Press the Encoder right of the display once. The SELECT TABLE window will open, where you can select a different Effect for this function. The left part of the window displays the selected Effect. If the Effect Group has been started, the Fixtures and Dimmers will be displayed on the Form mimic at the bottom left of the display.
  - ***PWM***: Pulse width modulation. The pulse width can be defined as follows: Press the EFFECT SETUP key once

(key has a dark background), press the PULSE WIDTH key once (key has a green background). Now, the pulse width can be modified using the Encoder below. The pulse width can be set to between 0 and 100%. Pressing the Encoder once shortly will automatically set the width to 25, 50, or 75%. You can also use the ALIGN function to set this value. **3.4.1** ALIGN function

The values set for the respective Effects will be displayed in the WIDTH column. **Press and hold** the Encoder and turn to the right so that the focus (blue cell frame with red background) will be moved to the right. When moving the focus beyond the right border, further columns will be displayed (WIDTH, BASE).

- ***RANDOM***: Random fade-ins of individual channels of the selected function. The number of channels to be faded in can be set.
- ***SIN***: Sinus function
- ***COS***: Co-sinus function
- ***LIN+***: Saw tooth ascending
- ***LIN–:*** Saw tooth descending
- ***TRIANGLE:*** Triangle function
- ***PHASE1/PHASE2/PHASE3***: Normally used to create rainbow color effects on fixtures with color mixing. Each of the phases is exactly out of phase with the other. This allows for an even and offset application across 3 parameters.

By pressing the USER DEFINED key (turns dark gray), user-created two-dimensional forms can be selected for the PAN/TILT parameters. If a form is to be created or modified, press the NEW or EDIT key to open the EDIT FORMS menu. **6.7** Creating and storing virtual forms

Pressing the SELECT key will adopt the function; the window will close discarding any modifications when pressing CANCEL.

- ***Dir (direction):*** In this column, an arrow indicates in which direction the Effect will be executed. To reverse the direction, select the cell and press the Encoder to the right of the display once.
- ***Size***: In this column, each Effect is displayed with a separate value. The set value increases or decreases the size of the selected parameter. The maximum limit for size modifications that can be set is from –200 to +200%. Before modifying the value of a size, select the Effect first. Press the SIZE key once (green background). Now, you can set a different size using the Encoder below. Clicking the Encoder once will automatically set the size to 100. Clicking the Encoder a second time will increase the value to 200 and at the third time will reset it “0”. You can also use the ALIGN function to set this value. **3.4.1** ALIGN function
- ***Modulator***: In this column, you can assign an individual Modulator to each individual Size effect. Using a Modulator, the effect size can automatically be altered. Think of it as and effect on the aplication of an effect to a parameter.

  To assign a Modulator for this effect, select this cell and press the Encoder on the right side of the Display. The SELECT MODULATOR window will open, where you can now go to NEW MODULTOR by turning the Encoder and clicking it to select this option. A new modulator will now be generated in the lower part of the sheet.
  - ***Modulator***: In this column, the different modulators can be discerned by their numbers.
  - ***Table***: The assigned effect for the modulator will be displayed by its name (Assignment ***see*** item **Table**, previous page).
  - ***From***: The starting point for the automatic modification in terms of percentage.

- ***To***: The end point for the automatic modification in terms of percentage.
- ***Phase***: Here, an angle for moving individual modulators can be set.
- ***Rate***: Display of the set ratio between the speed for this individual Modulator as to that of the whole Effect Group (Assignment item **Rate**, below).

- ***Base***: You can also set an average value for each Effect using the BASE VALUE option. The set value will overwrite all previously modified values of this function and by this, will control all Fixtures/Dimmers evenly. The value can be set to between 0 and 100%.
  Before modifying the BASE VALUE, select the Effect first. Press the BASE VALUE key once (green background). Now, you can set an average value using the Encoder below. Clicking the Encoder once will automatically set the value to 50% (default value). Pressing the Encoder a second time, the value will be deleted and set to NONE (no BASE VALUE). If **no** BASE VALUE ist set, the Cue that is playing back or a direct access value will take effect. You can also use the ALIGN function to set this value. **3.4.1** ALIGN function
- ***Offset***: By modifying the Offset, the starting points for the selected Fixtures and Dimmers will change. Default setting is between 0 and 100, i.e. the first Fixture/Dimmer starts with an offset of 0, the last with a maximum offset of 100%; all Fixtures/Dimmers in between will be distributed evenly. The maximum limit for Offset modifications that can be set is from -100 to +100.

  Before modifying the value of a size, select the Effect first. Press the OFFSET key once (green background). Now, you can set a different Offset using the Encoder below. Clicking the Encoder once will automatically set the value to 0. You can also use the ALIGN function to set this value. **3.4.1** ALIGN function
- ***Rate***: Display of the set ratio between the speed for this individual Effect as to that of the whole Effect Group. Possible settings range between 1:16 and 4:1. At a ratio of 1:16, the rate set for the Effect Group will be divided by 16. If the setting is 4:1, the rate will be multiplied by four.
  Before modifying the ratio's value, select the Effect first. Press the RATE FACTOR key once (green background). Now, you can set a different ratio using the Encoder below. Clicking the Encoder once will automatically set the value to 1:1.
- ***Grp (Group)***: Display of the set number, by which the assigned Fixtures or Dimmers will be divided. In the subdivided groups, the Effect will then fully be executed.
  Before modifying the subdivision value, select the Effect first. Press the GROUPS key once (green background). Now, the subdivision of the Effect can be set using the Encoder below. Clicking the Encoder once will automati cally delete the set value.
- ***Wing***: The set number will indicate, how often the assigned Fixtures or Dimmers and the Effect will be mirrored. Possible settings range between –8 and +8.
  Example: With a setting of 2, the assigned Fixtures/Dimmers will be divided in the middle. The set effect will now be executed in the first half forwards up to the middle, and in the second half, the Effect will be executed in reverse from the middle onto the last Fixture/Dimmer.
  With a setting of -2, the assigned Fixtures/Dimmers will be divided in the middle. The set effect will now be executed in the first half forwards up to the middle, and in the second half, the Effect will be executed in reverse and phase-shifted by 180° from the middle onto the last Fixture/Dimmer.
  Before modifying the wing value, select the Effect first. Press the WINGS key once (green background). Now, the

number of Effect wings can be set using the Encoder below. Clicking the Encoder once will delete the set value.

- ***AS (Adaptive Speed):*** If this function is activated, the speed will automatically be adjusted when the number of Fixtures or Dimmers changes. That means, the individual Effects of this Effect Group do **not** run at different speeds when working with different numbers of Fixtures or Dimmers, but always at the same step speed.
  To activate the function, select the cell. Press the Encoder right of the display once.

Or:

Activate by making a short right mouse click into the cell below AS. This will be indicated by a YES in this cell.

- ***Part (Partly):*** he sequence of an Effect can be subdivided 16 times, and an Effect can then be assigned to **the first individual** subdivision. This colomn displays what the subdivision ratio this part of the Effect Group belongs to.

Example: With a setting of 1:5, the individual Effect would always be executed in the first fifth of a Effect Group sequence. Before modifying the subdivision value, select the Effect first. Press the PART key once (green background). Now, you can set the subdivision of the Effect Group for the individual Effect by **pressing and holding** the Encoder below. You **cannot** designate a section in which a particular Effect is to be executed, it will always be executed as the first subdivision

Pressing the Encoder once shortly will set the value to ALWAYS and the Effect will be executed during the whole period.

6.2.2 Deleting individual Effects

Select the Effect to be deleted.

Press the DELETE LINE key.

6.3 Executing an Effect Group

If an Effect has started, this will be indicated for the appropriate Scanner and Dimmer channels by a violett bar in the Fixture, Channel or Fader Sheets. If you want to visualize the changes made to the values, the appropriate Sheet has be set to “Output“ (Options). **3.4.8 or 3.5.7** Options of Fixture, Channel and Fader Sheets

- Select the Effect Group from the Effect Pool. The Effect Group will be started automatically.

Or:

- The names and playback keys for the Effect Groups will be displayed in the right TFT display above the Encoders. The name of the currently selected Effect Group will appear above the left Encoder.

– Pressing the right arrow will start the complete Effect. The selected Fixtures or Dimmers will now form the Effect.
– Pressing the PAUSE key will stop or restart the complete Effect, respectively.
– You can switch off the Effect using the STOP key.
– By pressing the left arrow, the Effect will run backwards.

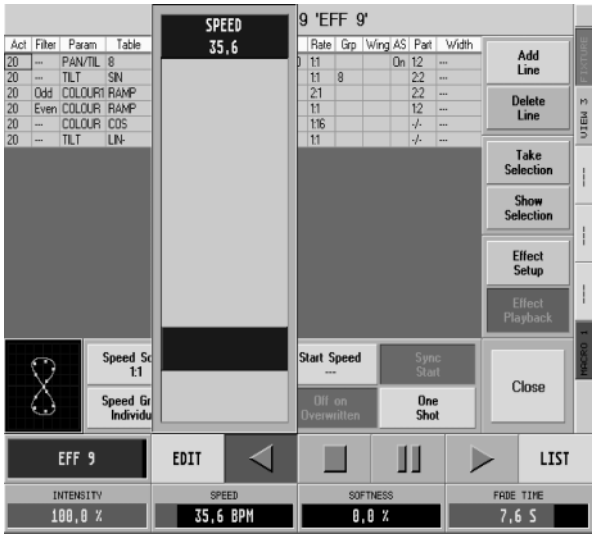
With the left INTENSITY Encoder, you can globally adjust the size of the whole Effect Group.

Pressing the Encoder while turning it will increase or decrease the Encoder’s resolution, depending on the setup.

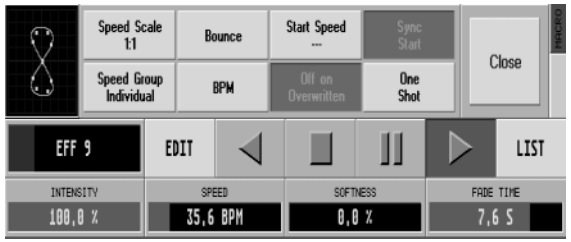
When pressing an Encoder or the key above, this will bring up a Fader above the Encoder in the display. Now, you can also use it to modify the value.

Use the SPEED encoder to set the speed for the whole Effect Group.

If you use the Encoder to increase the SOFTNESS value, the Effect will be faded in and out more softly. SOFTNESS



can be used for PWM-, RANDOM- and CHASE Effects.
Using the right FADE TIME Encoder, you can now globally set a fade in and fade out time for this Effect Group.
When switching the Effect Group on or off, this Fade Time will be faded in or out with the set duration.
Pressing the EDIT key will call up the Edit menu for this effect. **6.2** Editing Effects
Pressing the LIST key will open the VIEW ALL RUNNING EFFECTS window, where you have an overview on all currently active Effect Groups. **6.6** View ALL RUNNING EFFECTS menu



6.4 Customizing an Effect Group

The global settings like e.g. Bounce, BPM, Intensity, Speed etc., are automatically stored in the Effect Group
You can customize the individual sequences of the Effect Groups by using the respective keys.

- ***Speed Scale***: The current ratio of the SPEED setting will be displayed on the key. Pressing this key will open the SPEED SCALE menu. Pressing a key will re-adjust the Speed setting. With MUL BY 2 or MUL BY 4, the SPEED setting will by multiplied by 2 or 4, with DIV BY 2, 4 or 8, the SPEED setting will be divided by 2, 4 or 8. Pressing the 1:1 key will recall the default setting again.
- ***Speed Group:*** The key will display the currently assigned SPEED group. Pressing this key will open the SPEED GROUP menu. By pressing a key, you can designate a SPEED Group. Using the Fader of the assigned SPEED Group, you can now adjust the speed for this Effect Group. **5.1.6** Assigning Special Masters
  If INDIVIDUAL is selected (default setting), you can adjust the speed only by using the SPEED encoder.
- ***Bounce***: If this key is pressed (dark background), the whole Effect Group will first run forwards and then backwards, etc.
- ***BPM***: If this key is pressed (dark background), the speed of the whole Effect Group will be controlled by the automatic measure recognition. **2.14** Setting Sound signals
- ***Start Speed:*** Pressing this key once will store the currently set speed. The key will display the stored speed. From now on, this Effect Group will be started with this speed, even if the speed was changed during the execution. To delete the stored speed, use the Encoder to set the SPEED to STOP and press the START SPEED key once. Now, no speed is stored and the key will display NONE.
- ***Off On Overwritten***: This Effect Group will be switched off, when the OFF ON OVERWRITTEN key is pressed (dark background) and another Effect Group is started, in which the same Fixtures/Dimmers are to be used (default setting).
  If this function is disabled, the Effect Group will **not** be switched off. It is still active, but does affect any Fixture/Dimmer. The key of this Effect Group in the Effect Pool will display a white/red flashing "2". The number indicates, at what position this Group will be in relation to the other overwritten Effect Groups. If the **other** Effect Group that had overwritten this Group is switched off, this Effect Group will again affect the Fixtures/Dimmers. This function is active by default when creating a new Effect Group.
- ***Sync Start***: If this key is pressed (dark background), and another Effect Group had already been started, **this** Group will automatically be started at the same speed and position.
- ***One Shot:*** If this key is pressed (dark background), the Effect Group will only be executed for one complete run and will be deactivated.

6.5 Effect groups in Cues

During normal SAVE processes, you can also save Effect Groups in Cues. In the Cues, the settings for Call (GO, GO-, Pause and OFF), Intensity, SPEED, SOFTNESS and IN/OUT FADE TIME are saved. In the Cues, no further settings from the Effect Group will be saved (function as with presets).

Or:

It is also possible to create Cues, to which an own Effect Group can be assigned. If temporary Effect Groups are used when creating the Cues, a copy of the Cue will also be saved, i.e. it will not be depending on the original Effect Group anymore.

Exec 3.19
Sequ. 15 'Seq 15'
Times
Loops & Links
Effects
Info
No. Name MIB Trig Effects
1 1 Cue * GO Eff 1 OFF / Eff 38 GO / Eff 40 GO
2 2 Cue GO blinder GO
3 3 Cue GO Eff 1 GO / Eff 38 OFF / blinder OFF
4 4 Cue GO blinder OFF

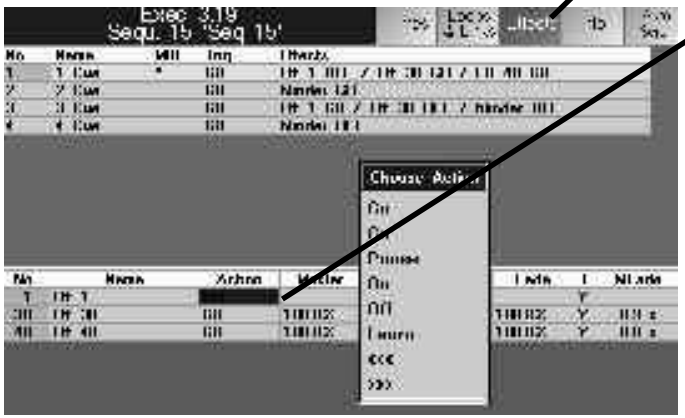
● Start an Effect Group in the Effect Pool by selecting it.
● Press the STORE button once.

● Press the EXECUTOR button to which the call is to be saved. The Effect Group call will be saved in the Cue with all settings mentioned above. If this Cue is called up, the Effect Group will be started.

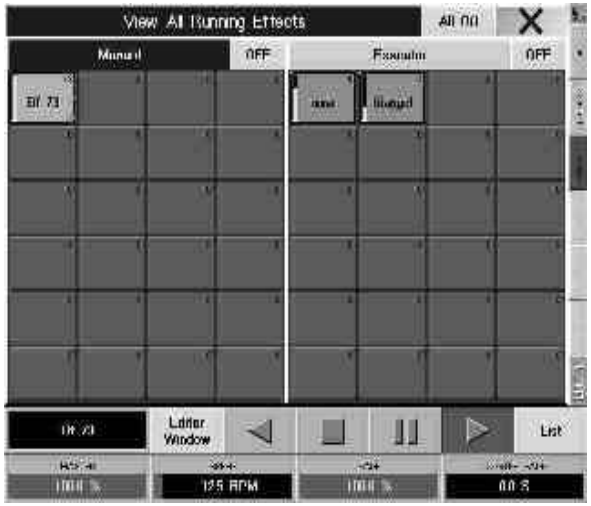
When calling up Effect Groups, its size, speed and softness can be faded in or out. If in the Effect Group a FADE TIME is set, the intensity and speed or softness of the Effect Group will automatically be faded in or out when this Group is started.

In the Executor Sheet or in Edit Sequence, press the EFFECT button (will be displayed dark grey). The window will be divided into two halves. The upper part will display the Cue, the lower part the calls of the individual Effect Groups for the selected Cue, including the respective parameters.
Select a Cue in which calls or parameters of Effect Groups are to be modified (selected Cue will be displayed with a blue frame and a magenta background).

The lower chart displays all calls of Effect Groups from this Cue.



Select an individual call to be modified (will be displayed with a blue frame). In the right display, the setting will be adopted and displayed above the Encoders and can be customized at will. If intensity, speed or softness are to be faded in or out with the set Fade Time when the Effect Group is called up, make one right mouse click into the cells behind the value in column **F** (Fade). The column will show a **Y** for YES. Press UPDATE to confirm the modifications and save them in the Cue.
You can modify the cells Name, Intens, Speed, F, Soft and Fade directly by a right mouse click.



6.6 View ALL RUNNING EFFECTS menu

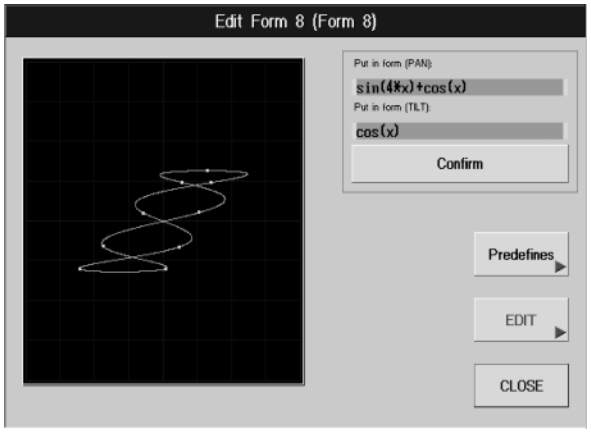
In this menu, all currently playing back Effect Groups will be displayed.

● Press the EFFECT key twice. (On older consoles, this key is not labeled and is positioned between the VIEW and GOTO keys. An appropriate label can be ordered from MA or from your local dealer)

Or:

● When choosing an Effect Group from the Effect Pool the respective key will be displayed above the Encoders. Press the LIST key on the touch screen.

- By pressing the ALL OFF key, you can switch off all Effect Groups simultaneously.
- You can leave the menu with the CLOSE key.
- In the left part of the menu, all manually called-up Effect Groups will be displayed. Pressing the OFF key on the right side of MANUAL, all these Effect Groups will be switched off.
- The middle part of the menu shows all Effect Groups that areplaying back via EXECUTOR faders. Pressing the OFF key right of the EXECUTOR will switch off these Effect Groups. **5.1.1** Assigning Effect Groups to EXECUTOR faders
- The left part of the menu shows all Effect Groups that are playing back via Cues. Pressing the OFF key on the right side of CUELIST, all these Effect Groups will be switched off.
- The lower part of the menu shows all Effect Group calls performed since the last Cue was stored, including their respective playback parameters. When storing the next Cue, all calls in this Sheet will also be stored. It is also possible to modify individual calls. To do so, select the respective call (will be displayed with a blue frame). The setting will be adopted, displayed above the Encoders and can be adjusted with them. You can delete a complete call by making a right mouse click into the NAME column. If you only want to delete a single parameter, make a right mouse click on the parameter.



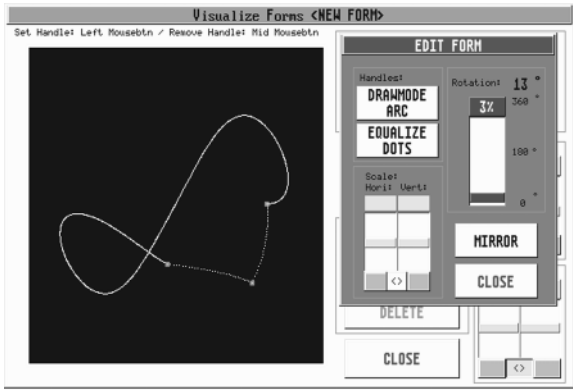
6.7 Creating and Storing Virtual Forms (EDIT FORMS)

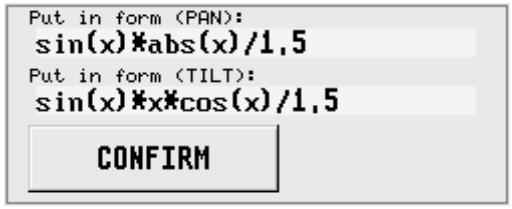
6.7.1 Creating Virtual Forms

From this menu, you can create two-dimensional forms for use with PAN/TILT parameters. When creating Forms, the movements can directly be output to the Fixtures. The created Forms will automatically be stored in the Form Pool.

Calling up this menu: **6.1.1** Creating an Effect Group, **item 3**
6.2.1 Editing Effects, **item Table**

● Press the PREDEFINES key once. A window will open, where several prepared Forms will be displayed. Select one of these Forms; this Form will now be displayed on the the black window.





Make a left mouse click on the respective fields – now enter the formula via keyboard.

The form will be confirmed by pressing CONFIRM.

6.7.2 Modifying Forms

The EDIT FORMS window will open by pressing the EDIT key.
Make a left click with the mouse on at least three positions of the marked form. With each click on the form, a new red dot will be displayed on that position. In order to delete one of the dots, middle click with the mouse on this dot.
To reshape the form, click and drag with the mouse on one of the red dots. If you click the right mouse key during the reshaping (while holding the left mouse key), you can define the reshaping each time.

- By pressing the key, you can program in which way the lines shall be drawn when reshaping the form:

- ANGLE: straight line
- ARC: outer arc
- ARROW: inner arc

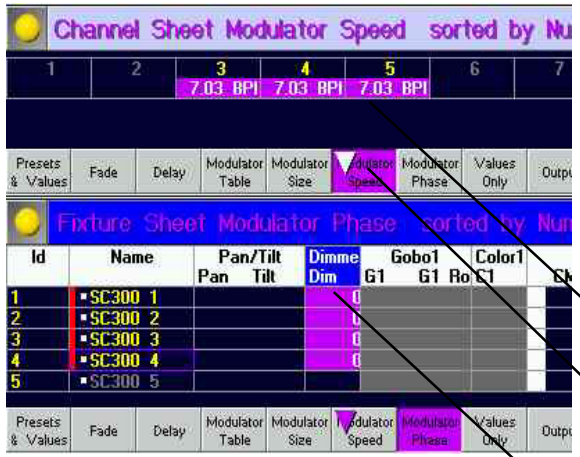
By reshaping the form, the lines will be expanded and, respectively, the extended positions of the form will be reported to the Fixture faster.

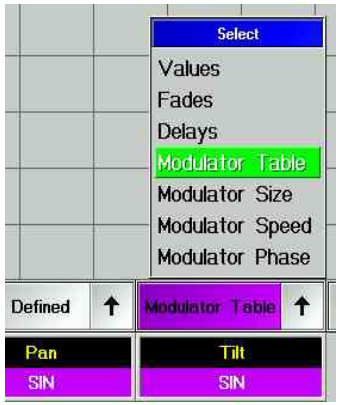
- If the extended lines and, consequently, the longer ways for the Fixture are to be transmitted with the same speed, you have to press the EQUALIZE DOTS key once.
- The form can be modified in its horizontal or vertical size using the Hori: and Vert: sliders. By pressing the dark-grey key below the modified sliders shortly, both values can be set simultaneously. By pressing the "< >" key, both sliders can be coupled, so that the size can be modified simultaneously.
- Using the ROTATION slider, the form can be turned from 0° to 360°.
- By pressing the MIRROR key, the form can be mirrored.
- You can leave the EDIT menu with the CLOSE key.

With good knowledge in maths, you can also use formulas for PAN and TILT.
Syntax to enter a formula manually:
The standard display of mathematic formulas will be executed. The following is allowed:
✍ Mathematic Basic Operators: +, –, *, /

Numerical constants:	integers, floatingpoint numbers or exponential figures		
	Example for valid numerical constants:		2.71818
			1.2e – 2
			0,4
Other constants:	pi		corresponds to the circle figure π
Variables:	x		
Mathematical functions:			
–	sin(x)	or	sinus(x)
–	cos(x)	or	cosinus(x)
–	abs(x)		corresponds to the absolute amount
–	sqrt(x)		corresponds to the square root
–	pow(x; y)		corresponds to the y Power of x
	Arguments errors with x = 0 und y < = 0 or with x < 0 and y are no integers		

Examples: sin(3 * x)
sqrt(abs(x)) * sin(x)
sin(x) * cos(3 * x) * pi/2
(cos(x) * abs(x) + 1) / pow(x;2)
(cos(0.5 * x) * abs(x) + 0.5) / 2





6.8. Modulators INDEX

While the modulators that are used for the effects will only influence the whole effect, it is now possible for each feature to use a modulator for effects, and for the speed, size and shifting of effects within the modulators of the Fixture and Channel Sheets. The modulators run within the Programmer, i.e. they are not permanent. You can only save changes as Cues; effects transferred with the TOP button to the modulators will remain unchanged. For each attribute of a fixture, four modulator settings are available, each of them being individual.

Assigning modulators to a fixture:

- select fixtures (here the fixtures 3-5 from the Channel Sheet)
- open ***FIXTURE*** or ***CHANNEL SHEET***
- in ***OPTIONS***, press the ***LAYER CONTROL*** button; it has a violet background and shows, which values are displayed in the Sheet (in the SPEED graphics of the Channel Sheet, and in PHASE in the FIXTURE Sheet); the violet or white triangle shows, which value is being entered into the active Sheet using the Encoder (in the SPEED graphics in the Fixture Sheet).
- select the ***FEATURE*** to be executed by the modulator. (here: Dimmer in the Fixture Sheet)
- In the Select menu, select for which features the modulator values are supposed to be valid. In order to do so, press on the right arrow and select using the Encoder, confirm by pressing on the Encoder, or select the menu by pressing on the text button.

- *SINGLE* only the attribute selected from the Fixture or Channel Sheet will be changed

- *SINGLE for ACTIVE* only the attributes ***selected*** from the Fixture or Channel Sheet and now being ***active*** will be changed

- *FEATURE* only the feature selected from the Fixture or Channel Sheet will be changed

- *FEATURE for ACTIVE* only the features ***selected*** from the Fixture or Channel Sheet and now being ***active*** will be changed

- *ALL* all attributes of the selected fixture will be changed

- *ALL for ACTIVE* all attributes ***selected*** from the Fixture or Channel Sheet and now being ***active*** will be changed

- *DEFINED* only the defined attributes will be changed In order to do so, press on the left arrow and select the desired attributes from the menu (attributes with a green background have been selected); this setting remains valid for the period that the show remains loaded.

- *DEFINED for ACTIVE* only the ***defined and active*** attributes will be changed

- select a modulator; in order to do so, press on the right arrow and select it using the Encoder, confirm by pressing on the Encoder, or select the menu by pressing on the text button.

- select ***MODULATOR PROPERTIES*** using the left Encoder below the Screen, chose an effect or a setting and confirm by pressing on he Encoder on the side of the Screen.

NONE no effect selected

PWM Impulse Width Modulation

RANDOM Random fade-ins of individual channels of the selected function

TABLE here, specific effects have a special background (identical to TABLE in EDIT EFFECT)

FORM here, forms that were previously defined and are in the FORM pool memory have a special background

- ***MODULATOR SIZE:*** here, you can enter the size of the effect (in the graphics, 100% are entered)

- open the ***Calculator*** using the Encoder below the Screen, enter the value und confirm with ***ENTER***

- ***MODULATOR SPEED:*** here, you can enter the effect speed in ***B***eats***P***er***M***inute

- open the ***Calculator*** using the Encoder below the Screen, enter the value und confirm with ***ENTER***

- ***MODULATOR PHASE:*** here, you can enter the angle for shifting the modulator

- open the ***Calculator*** using the Encoder below the Screen, enter the value und confirm with ***ENTER***

All entries are executed immediately and can be controlled from the STAGE view or, even better, from the 3D VISUALIZER.

- delete the settings by pressing 3x CLEAR; all effects will be deleted from the Programmer immediately.

or

Save setting as Cue:

- press ***STORE***
- press on an empty cell in the small Executor window or an empty Executor button

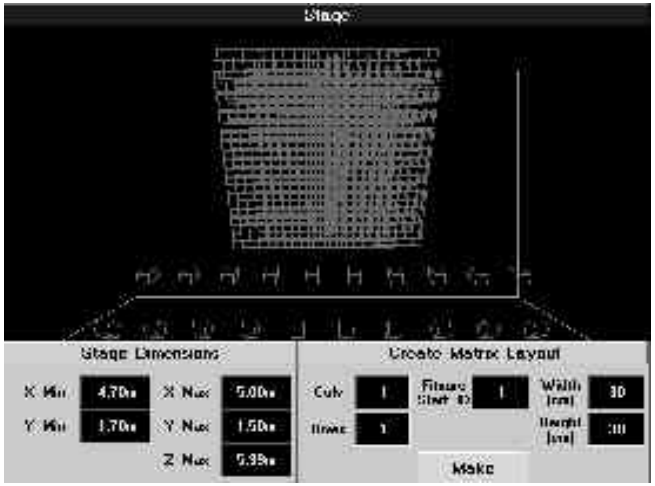
The effect will be saved as a Cue; in the Sheets, the white text on a violet background will change to yellow on a dark background. If PROGRAMMER ONLY had been activated, all features will disappear from the Sheet. This Cue can now be executed or edited like a normal sequence.

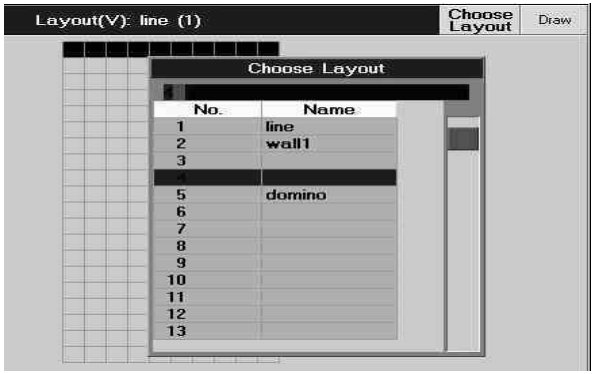
Applying EFFECTS to the Modulators:

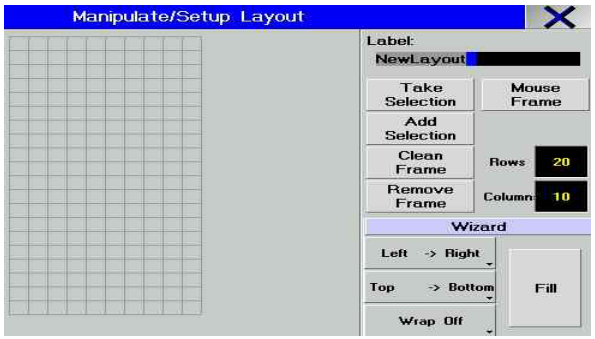
By transferring effects to modulators, you are enabled to execute changes very rapidly. As the effect will be permanent, you can delete a temporary change after its execution or save it as a Cue.

- start the Effect button in the Effect pool
- press ***TOP***
- press the Effect button of the currently running effect in the Effect pool

The effect stops (disappears from the ALL RUNNING PROGRAMS menu) and its settings can now be seen in the modulators. All fixtures involved are marked by a red bar; all settings taken from the effect, have a dark violet background in the modulators (all changed modulators have a violet background).







7 BITMAP Effects

Besides the effects mentioned in chapter 6, you can use the ***Bitpmap Effects*** function to run graphics in a fixture matrix. You can either create Bitmap graphics on a PC and then import them, or directly create them in the DRAW mode. With CREATE TEXT, you can also create texts as Bitmap graphics. The „setting" for the effects is a fixture matrix to be created in SETUP. In the Editor, you can assign effects (e.g. rotation, zoom, etc.) and a layout to the fixture layout. Bitmap effects can be assigned to Executors and be controlled very easily, just like normal effects.

TAKE CARE THAT THE FIXTURE TYPE USED HAS THE FUNCTIONS TO BE USED IN THE EFFECT.

7.1 Creating a Layout for a BITMAP Effect

Assign the fixtures in the setup:

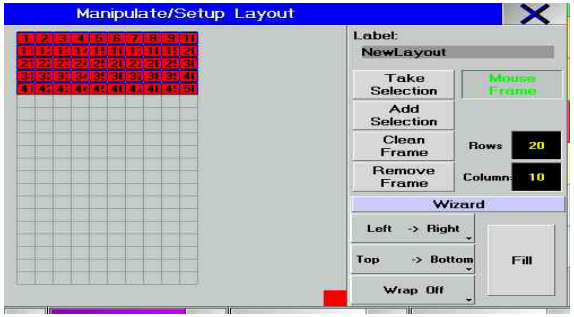
In SETUP, you can create a matrix that will be visible in the Stage view; that helps creating Bitmap effects.

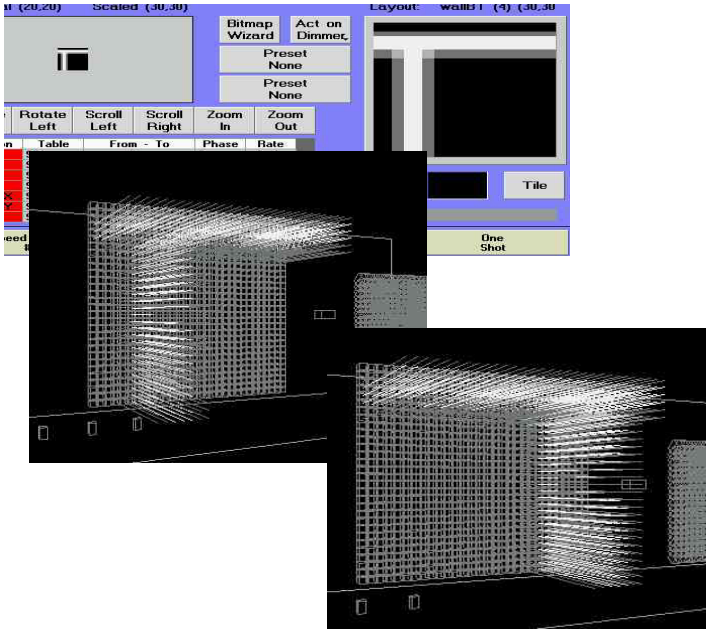
- press ***SETUP***
- press ***FULL ACCESS***
- press ***STAGE SETUP***
- set ***COWLS*** and ***ROWS*** using the Calculator (number of vertical and horizontal rows of the matrix)
- use ***WIDTH*** and ***HEIGHT*** to set the vertical and horizontal gap between the rows
- use ***MAKE*** to execute the setting
- Press „X" to leave the menu.

Create a layout:

Here, you can create layouts that can later be assigned to a Bitmap effect.

- open the LAYOUT VIEW menu using CREATE A WINDOW.
- press ***CHOOSE LAYOUT*** and use the Encoder to select + confirm a free layout number in the overview.
- open the ***OPTIONS*** (press the yellow button in the upper left corner).
- press ***SETUP*** to open the MANIPULATE / SETUP LAYOUT menu.
- click on the ***LABEL*** line and enter a name for the layout; confirm with ***ENTER***.
- select the fixtures to be used in the layout (on the STAGE, FIXTURE or CHANNEL Sheet).
- enter the values for ***ROWS*** and ***COLUMNS*** (number of rows and columns making the grid); pressing on the digit cell will open the Calculator; after entering the values, confirm with ***ENTER***. The menu will now show the selected grid where you can place your fixtures.
- Transferring fixtures into the layout





- ***MOUSE FRAME;*** if the button is activated (text turns green), you can draw a blue frame on the grid. This frame forms the target for the commands CLEAN, REMOVE, and FILL. If the button is not active (text is grey), you can fill the grid using the FILL command, or you can deliberately position individual fixtures on a free cell.
- ***TAKE SELECTION;*** the selected fixtures will be transferred into the layout and you can position them using the WIZZARD command.
- ***ADD SELECTION;*** when there are already fixtures positioned in the layout, the selected fixtures will be added.
- ***CLEAN FRAME;*** fixtures within the blue frame (drawn with the active MOUSE FRAME) will be taken out of the layout and „bunkered" as red squares adjacent to the grid.
- ***REMOVE FRAME;*** fixtures within the blue frame (drawn with the active MOUSE FRAME) will be deleted from the layout, but can reintegrated again into the layout using the ADD SELECTION command.

Positioning fixtures within the layout:

The order in which fixtures are arranged, will influence how the effect will appear later.

The default setting is Left-Right, Top-Bottom, and Wrap Off – with this setting, the stage output will correspond to what is displayed in the Preview window. Changes applied to this setting will not appear in the Preview window of the Bitmap Editor, so that it is advisable to check them in the STAG view.

- ***LEFT - RIGHT / RIGHT - LEFT;*** places the ID number starting point to the left / right margin
- ***BOTTOM - TOP / TOP - BOTTOM;*** places the ID number starting point to the bottom / top margin
- ***WRAP OFF***; arranges the fixtures horizontally in an ascending order of their ID numbers;
- ***WRAP ON***; arranges the fixtures vertically in an ascending order of their ID numbers;

If a Bitmap effect runs on the same fixture matrix, but with differently filled layout, this will produce mirrored representations. (see example on the left)

Using the default setting will take the stage output as displayed in the Preview window; if LEFT and RIGHT are exchanged, the stage output will be displayed mirrored. You can save both layouts under different names and allocate them to the effect.

● ***FILL;*** all fixtures taken over into the layout will be placed in it using the selected settings (as far as there is enough space available – fixtures in excess will be „spared" in a red square adjacent to the grid.

or

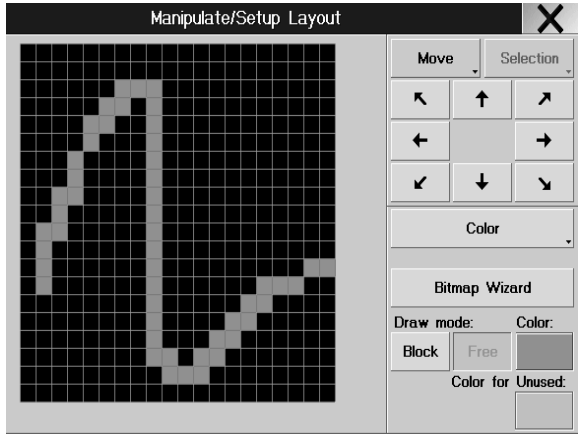
● position each fixture individually; in order to do so, click (mouse or finger) on the red square and draw it on a free cell in the grid.

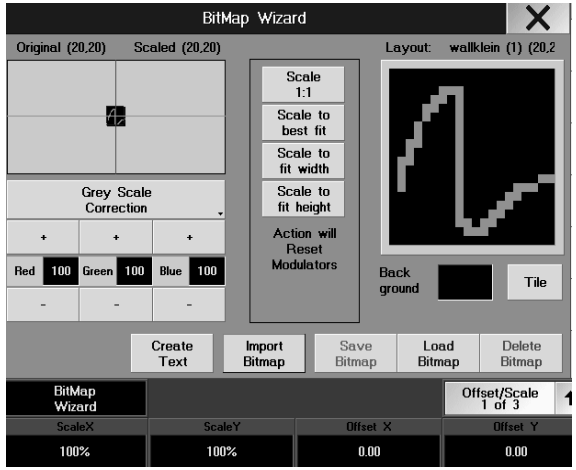
● Press „***X***" to leave the SETUP menu.

● leave the ***LAYOUT VIEW*** menu using ***OPTIONS*** and ***DELETE WINDOW***.

Use ***DRAW*** to switch over to the drawing mode.

In this menu, you can create a graphics in a selected layout by hand or mouse, or you can modify already created graphics. Besides changing the layout, you can also change all values of the fixtures involved. Save the drawn graphics as a bitmap or save the individual layout steps as a Cue. You can delete all changes by pressing CLEAR 3 times.





- open ***LAYOUT VIEW***
- pick a layout with ***CHOOSE LAYOUT***
- pressing ***DRAW*** will bring you into the drawing mode
- choose DRAW MODE.
  - ***FREE;*** allows you freehand drawings using the mouse or your finger
  - ***BLOCK;*** forms a rectangular frame
  - ***COLOR;*** opens the color menu for fixtures with color changers Choose a color and insert the new color by pressing on the Color button in the Select menu. When using ACT ON CMY, this color will be assigned to the selected cells.
- choose ACT ON
  - ***GREY;*** a dimmer value will be assigned to the selected cells
  - ***COLOR;*** a color value will be assigned to the selected cells

The selected cells receive a yellow frame and will disappear, the next time you touch the screen. Only if the selected cells have an assigned dimmer value, these cells will be kept (grey scale according to dimmer value) and you can select the next cells. Each selected cell will immediately loose its dimmer value – this way, you can delete individual cells from the graphics. And this is also, how to create a graphics with different dimmer values.

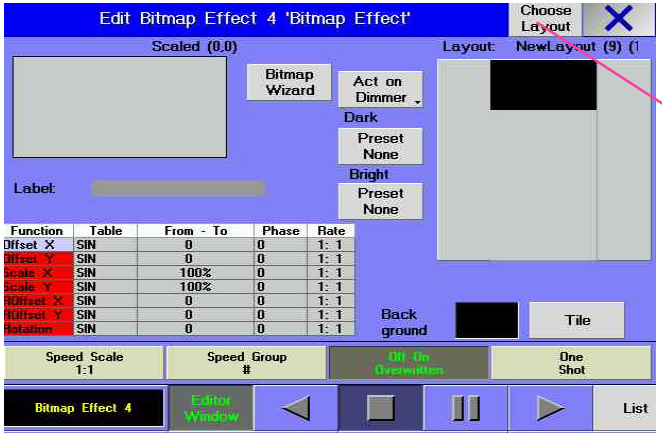
- ***COPY***;
- ***SELECTION;*** only the selected cells (yellow frame) will be copied
- ***TOTAL;*** all active cells will be copied
- ***MOVE;*** using the arrow keys, you can move the graphics in the desired direction
- ***MIRROR;*** using the arrow keys, you can mirror the graphics

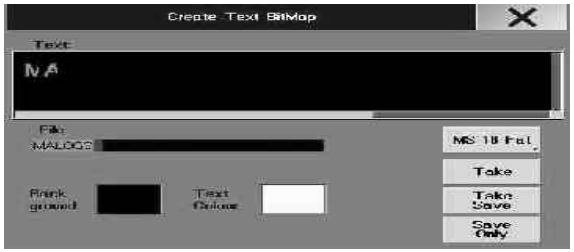
- saving or deleting settings

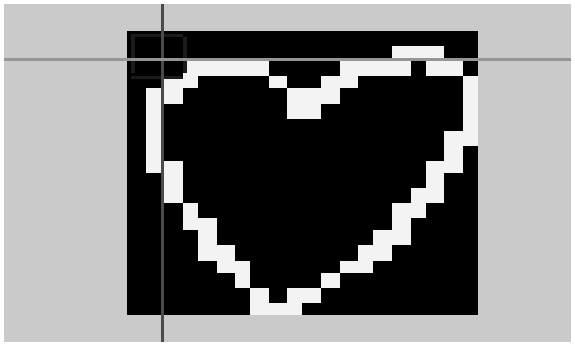
- using ***SAVE***, you can save the graphics as sequence to a free Encoder or
- using ***BITMAP WIZARD***, to switch to the WIZARD menu
- using SAVE BITMAP, you can save the created bitmap
- or the other way round: load a bitmap graphics in the Wizard, return to the Draw mode, and go on processing the graphics there

or delete all selections and setting pressing CLEAR 3 times.

- Press „***X***“ to leave the SETUP menu.
- leave the ***LAYOUT VIEW*** menu using ***OPTIONS*** and ***DELETE WINDOW***.







7.2 Creating / Changing BitMap effects

- press ***EDIT*** and an empty button in the ***BITMAP EFFECTS*** window.
- using ***CHOOSE LAYOUT***, select a previously created layout from the overview; the current layout is indicated by its name and number and with the number of rows and lines below the CHOOSE LAYOUT button.
- open the ***BITMAP WIZARD*** to load, create or adapt a bitmap.
- ***Creating a graphics***

- CREATE TEXT; to create and save a text bitmap.

- press ***CREATE TEXT***, enter text and text size, and name the file.
- with ***TAKE***, transfer it to the Wizard, with ***TAKE SAVE*** save it and simultaneously transfer it, or just save it with ***SAVE***.

- SAVE BITMAP; to save a bitmap on the console's hard disk.

- LOAD BITMAP; to load a bitmap from the console's hard disk.

- DELETE BITMAP; to delete a bitmap.

- IMPORT BITMAP; to import a bitmap from floppy disk.

- press ***„X"*** to return to the ***EDIT*** menu
- choose a background color
- ***TILES*** (tiling function) sets the graphics as multiple tiles one after the other.
- using ***BACKGROUND***, choose the background color. Choose color and brightness in the Select menu and press the button for the desired color.
- ***COLOR CORRECTION / GREY SCALE CORRECTION***

- set the offset values using + or - or the Calculator (pressing on the black number cell).

- select a scaling

- SCALE 1:1; will transfer the bitmap 1:1 into the selected layout

- SCALE TO FIT WIDTH; will scale the bitmap to the optimum width for the selected layout

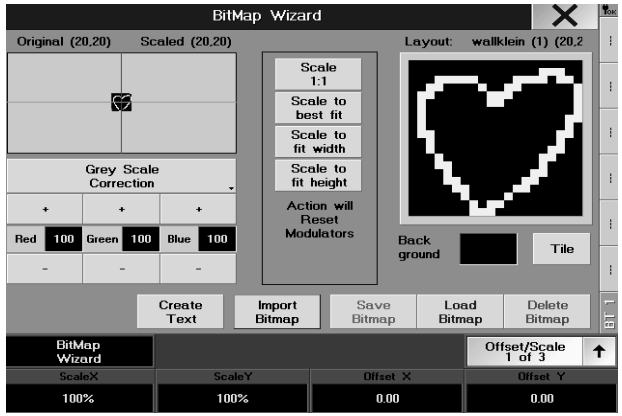
- SCALE TO FIT HEIGT; will scale the bitmap to the optimum height for the selected layout

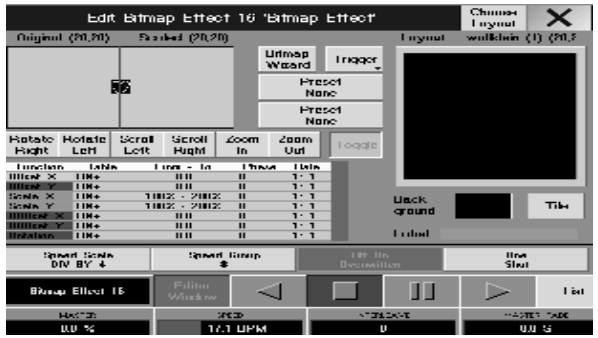
- SCALE TO BEST FIT; will scale the bitmap to the optimum appearance for the selected layout

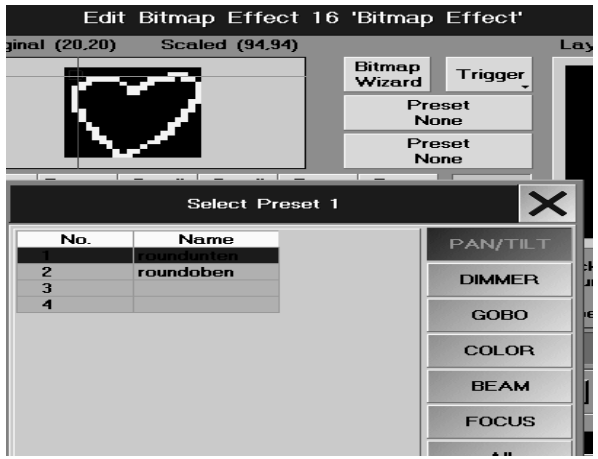
- using the Encoders below the screen to set the bitmap starting position; after switching the page, you can also turn the bitmap around and change its rotation point.

The cross-wires and the projection frame are very useful when setting up the bitmap effect.

- ***OFFSET***: here, you can change the bitmap-to-matrix position - the projection frame will be offset along the x or y axis
- ***ROTATION OFFSET***: here, set the pivot point for a rotaton - the cross-wires will be offset along the x or y axis
- ***ROTATION***: here, enter the bitmap position
- ***WIDTH***: here, enter the bitmap width
- ***HEIGHT***: here, enter the bitmap height







● press „***X***“ to return to the ***EDIT*** menu

● enter the values for the individual functions (e.g. horizontal shift or rotation).

Enter preset values: (if TOGGLE is active = is green, you can combine multiple settings)

- ROTATE RIGHT will insert „0° - 360°“ into the Rotation column

- ROTATE LEFT will insert „360°“ into the Rotation column

- SCROLL LEFT will insert „-5.0 – 5.0“ into the OFFSET X column

- SCROLL RIGHT will insert „5.0 – -5.0“ into the OFFSET X column

- ZOOM IN will insert the „100% - 50%“ into the SCALE X and SCALE Y columns

- ZOOM OUT will insert the „100% - 200%“ into the SCALE X and SCALE Y columns

or

Enter individual values:

- click on the cell in the respective column and open it by pressing on the Encoder; enter values and confirm with ***ENTER***

- TABLE; here, you can select the effect

- FROM TO; here, you can enter the starting and end points

- PHASE; here, you can enter the angle to shift the effect

- RATE stands for the ratio d

● set ACT ON; depending on the setting and type of BITMAP, the buttons below are active (bright – values can be entered) or inactive (dark – no modifications possible). The values allocated to the bitmap are marked by a violet bar over the respective column in the Fixture or Channel Sheet.

- ***GREY***: dimmer values are assigned to the graphics element

- ***TRIGGER***: presets are assigned to the graphics element
  - Preset 1 - the preset is assigned to the graphics background
  - Preset 2 - the preset is assigned to the graphics
  - Background - the preset is assigned to the matrix outside the graphics

- ***COLOR:*** color values are assigned to the graphics element

● define the order using the 4 Encoders

- MASTER here, you can set the dimmer value

- SPEED here, you can set the effect speed. (however, the graphic's movements also depend on the settings FROM – TO, SPEED SCALE, and RATE)

- FADE here, you can

- MASTER FADE here, you can set the time to fade out and fade in the effect after start and stop

● enter a name for the BITMAP EFFECT in the ***LABEL*** line and confirm with ENTER.

Placing a BITMAP EFFECT on a fader / button:

● ***press*** ASSIGN ***once***

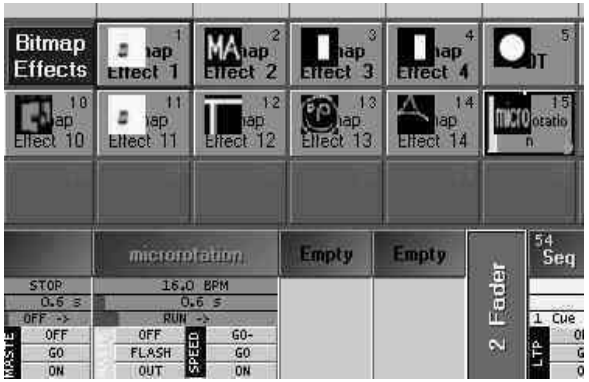
- press on an Executor button not yet assigned

or

- press on an Executor fader (small Executor window EMPTY)

● in the ***ASSIGN*** menu, press the ***BITMAP EFFECT*** button

● in the overview, select the desired effect using the Encoder, and leave the menu by pressing „X“



7.3 Starting the Effect

● open the ***BITMAP EFFECTS WINDOW***

● press the button in the ***BITMAP EFFECTS*** pool

Or, if the effect had been placed on a fader or a button:

● start the effect using the fader or button

As is the case with the effects, you can modify the speed while the effect is running

WARNING! If you open the BITMAP WIZARD in the EDIT menu, the effect will stay active!

8 Remote Control

8.1 Timecode

All sequences, chases and cues on the ***grandMA*** can be synchronized by using Linear Timecode (LTC) or MIDI Timecode (MTC).
Timecode synchronization can be used to trigger one or more controllers to synchronize with an audio or video recording. SMPTE 24-, 25- and 30 Drop and Non-Drop Frames are encoded time information, e.g. recorded on a separate track of a multitrack tape (frequency range of 1–2 kHz). Normally, this Timecode is already added when compiling the music, e.g. for presentations, but it can also be recorded afterwards in a regular recording studio. If the music is recorded in stereo, a third track is needed for the Timecode.
All sequences programmed into the ***grandMA*** can be synchronized by Timecode.
During the playback of the tape, the Timecode information is transmitted to the connected controllers. Each controller has an internal memory that triggers the activation of a specific program at a given point of time. On the ***grandMA***, the EXTERNAL LTC Timecode can be connected via a jack socket and the MTC via Midi IN on the rear of the unit.

8.1.1 Introduction to the Timecode System

Here the major advantages of the new Timecode System:

- Timecode shows are organised in a pool. The basic handling of timecode shows like edit, copy, delete, etc. is totally compliant with the rest of the console's syntax.
- Timecode shows are completely embedded into the command line. So you can now start timecode show number 5 from a macro.
- GOTO commands are supported and are used as the default when recording normal GOs. This means that the timecode show is referancing absolute cue numbers.
- Cue names and numbers are displayed in the timecode show.
- All kinds of executor fader movements are recordable. So you can now record the change of a chaser speed or a manual crossfade.
- Automatic fader data reduction, reducing the amount of recorded fader movements dramatically and allowing easier manual editing afterwards.
- Free choice of editing in graphic or text mode. Text mode supports filtering so that you can watch only the executors that you want to.
- Blind programming.
- No restrictions to the number of timecode shows running at one time; memory permiting of course.
- No restrictions for "no mouse please, users". The timecode show can be fully edited with the encoders and/or the touchscreens.
- Timecode shows can be "write-protected". So if you only want to watch your show running, you will not accidentally change something.
- Copy / Paste functions between different timecode shows is now possible. Timecode shows can be merged together.
- Autostart feature for timecode shows, e.g. the show will automatically load and run upon detection of the correct SMPTE signal.
- Repeat function with definable number of repeats for timecode shows with internal synchronisation.

8.1.2 Creating a Timecode Show

Graphically with the touch screens or mouse:

- Open a timecode pool window.
- Touch one of the timecode show keys, you will get the timecode control bar for this show in the display on the right.
- Enter the name for the timecode show using the PC keyboard.
- Press the EDIT field in the timecode control bar, and the timecode editor will appear.

Using the command line:

- EDIT TIMECODE X ENTER . Brings up the timecode editor and the timecode control bar for timecode show X. There is no hardware key for TIMECODE on the ***grandMA***, but you can enter this in the command line or into a macro by using the text keyboard.

Combining the two methods:

- EDIT and then touch a key in the timecode pool.

If the timecode show that you have selected was empty, there will be only the empty editor in front of you and you can now start recording or manual editing.

8.1.3 Playing back a Timecode Show

Graphically with the touch screens or mouse:

- Brings up a timecode control bar for the desired timecode show when touching a key in the timecode pool.
- Use the cells with the cd player-like symbols to control the show playback.

Using the command line:

- COMMAND TIMECODE X ENTER. COMMAND is one of the executor commands that you will find above the page keys. You can use GO+ , PAUSE, <<< , >>> , ON and OFF.

Combining the two methods:

- COMMAND (as described above) and then touch a key in the timecode pool.

Description of playback commands:

Status	Command Line	Description
STOP	OFF	Show is stopped, no output is generated.
PAUSE	PAUSE	Show is stopped, output is generated for current time.
PLAY	GO+	Show is running.
RECORD	STORE	Show is recording.
JUMP BACK	<<<	Show jumps to the next breakpoint before current time.
JUMP FORWARD	>>>	Show jumps to the next breakpoint after the current time.

If a show is generating output, the corresponding key in the timecode pool will show the current time. In case of recording, this key is also blinking red with the note “REC”.

External / Internal Sync

PLAY and RECORD on the sync setting in the options menu for their behaviour.

If sync is set to internal, time runs continuously, based on the internal time base.

If sync is set to “SMPTE“, the current time of the timecode show depends on the SMPTE input signal. If MIDI is set, MTC (Midi Timecode) will be used.

In the headline of the timecode pool you will find a SMPTE input indicator. Regardless of the shows using SMPTE, it will always display the current SMPTE input signal together with the SMPTE frame format.

If a show is using SMPTE (external synchronisation), the local time within the show can differ from the external SMPTE

time. By using the timecode offset in the options menu, you can set up a time offset, which is subtracted from the external SMPTE time.
Shows which are using internal sync can have a user definable repeat. These settings are also found in the options menu.

Pre Roll & After Roll, Dropout Elimination

Due to the fact that SMPTE is an analogue signal, fluctuations can occur. Very often there are temporary errors in the recorded SMPTE signal which are called dropouts.
As such misleading small errors should of course not affect the board, it filters out these errors automatically. Therefore the desk is filtering out these errors.
This filter is controlled by two values: **PRE ROLL** and **AFTER ROLL**.
PRE ROLL defines the time that a signal must be error free before it is accepted by the console.
A small pre roll means that your console reacts faster to incoming SMPTE signals.
AFTER ROLL defines the time that a signal must be continuously in error or missing before it is assumed to be off. During the after roll time, the console continues the show, using its internal time base.
A small after roll means that your console stops faster after the SMPTE signal has stopped, but that it is also reacting faster to errors in the SMPTE signal.
The settings for pre roll and after roll can be found in the **context menu of the timecode pool**. This can be accessed by right clicking on the headline of the Timecode pool.
The names for pre roll and after roll have a historical significance. At the beginning of the timecode era , the huge tapes in the machines which contained timecode and audio signals where really visibly rolling .

Manually Changing the Current Time

If the show is playing back or recording with external sync, it is not possible to change the time manually.
There are many different ways to change the current time of your show when using the internal time base:
Graphically with the mouse:
- left mouse click somewhere into the timeline

With the encoder:
- Turn the time encoder (leftmost) to change the current time. Each click on the encoder means one frame.
- If you p ress and turn this encoder simultaneously, each click means one second.
- If you press the encoder without turning, you can enter an absolute time.

With the “jump to breakpoint” commands:
- You will find them as the outer playback symbols in the timecode control bar and as command line functions <<< and >>>.
- Time will jump to the next available breakpoint in the given direction.

With the event encoder (second) in the bar:
- Whenever you select a new event , time will jump to the exact time of that event.

8.1.4 Recording a Timecode Show

Recording is enabled only if the timecode show is not write-protected (options menu).
Recording will always be „live on stage“ and can be done in three ways:

a) Fully automatic recording with external synchronisation. The current time is given by the SMPTE signal and every executor command or fader movement will be added to the timecode show until you stop or pause the show. Your actions and pre-recorded items already in the show will be live on stage. You can repeat the recording process step by step to add more and more details to your show.

b) Fully automatic recording with internal synchronisation. Basically the same as with external sync, time is running continuously, but you where to start and where to stop.

c) Semi-automatic manual recording. In this mode time is not running, although your show is in recording mode. Between each executor command that you want to be recorded, you can set the recording time manually with an encoder or by direct absolute input (simply press the first encoder). This is probably the best way of editing for the experienced user, who already has a time table in front of him. Even fader commands can be recorded this way.

Starting to record:

- **Automatic recording** is started by pressing the record symbol in the timecode control bar (the red symbol). The depending on the sync-setting (in the options menu) you will record with internal or external synchronisation. Automatic Recording can also be started from the command line in a similar way to recording a macro: STORE TIMECODE X ENTER or STORE and press a key in the timecode pool.
- **Manual recording** is started by pressing the MANUAL RECORD key in the timecode editor.

Stop recording:

- Recording is stopped when you PAUSE or STOP the timecode show.
- Automatic recording with internal sync will also be interrupted if you enter a new time.
- Recording is NOT stopped when you close the timecode editor. So be aware of what is being recorded, otherwise you will discover a huge timecode show at some later point.

After recording, particularly if you have recorded fader movements, it is a good idea to use the **DO FADER DATA REDUCTION** (in the options menu). This keeps your show slim and easier to edit. The fader data reduction process guarantees, that the compressed signal will not differ more than 1 frame in time and 1% in value from the original. Usually recorded fader events will be reduced to 20% or less of the original amount.

The Length of the Show

During recording, the length of the show is automatically extended if needed. This also happens if you manually add events after the current length (see manual editing).
The length of a show becomes very important if you plan to use internal sync and repeat. In combination with the “when reaching the end” setting (to be found in options menu), it is worth taking into consideration how long your show should be.
The length of the timecode show can be changed in the options menu.

8.1.5 Manual Editing of a Timecode Show

Editing is only enabled, if the timecode show is NOT write-protected (options menu).

Track Management

A timecode show consists of ***TRACKS***:
A TRACK has a specific function. At the moment, only **EXECUTOR TRACKS** are implemented, but in the future, it is conceivable to have tracks implimented for submasters, global speeds etc., too. This way, one track would

always relate to one specific executor. It is not possible to have two tracks for the same executor.
A TRACK consists of **SUBTRACKS**:
A SUBTRACK has a specific function that relates to its "parent track". For example, a subtrack for an executor track could have the crossfade function. One subtrack always relates to one specific function. It is not possible to have two subtracks for the same function.
Every executor track has at least one subtrack for executor commands. Subtracks for fader movements are added if needed.
A SUBTRACK contains **EVENTS**:
An EVENT contains specific TIME and DATA information. The DATA is interpreted according to the function of the assigned subtrack.

Adding Tracks

When recording TRACKS are automatically added, but of course you can also add tracks manually:
- Press the TRACK FUNCTIONS key or make a right click with the mouse in the track display of the timecode show editor (on the left side, below the sort key).
- Select ADD NEW TRACK.
- Choose an executor from the list, or simply press a physical executor button. You can even enter EXEC 17 ENTER in the command line. An executor track for this executor will be added to your timecode show if it did not exist already.

Changing the Executor

Changing the executor of an already existing track is very similar to adding a new track:
- Choose the track that you want to change (with the track encoder or by touching it)
- Press the TRACK FUNCTIONS key.
- Select CHANGE EXECUTOR from the list. The rest is similar to adding a new track.

Adding Subtracks

When recording SUBTRACKS are added automatically. Of course you can also add subtracks manually. Subtracks can only be added to already existing tracks:
- Choose a track (with the track encoder in the bar or by touching it).
- Press the TRACK FUNCTIONS key or right click with the mouse on the TRACK.
- Select ADD NEW SUBTRACK.
- Choose the type of the new subtrack from the list.

Deleting Tracks or Subtracks

- Choose a track (with the track encoder in the bar or by touching it).
- Press the TRACK FUNCTIONS key or right click with the mouse the TRACK.
- Select DELETE TRACK.
- If the track contains events, you will be asked for a confirmation, otherwise the track will be deleted immediately.
- If you delete the first subtrack (like executor command track), the whole track with all its subtracks will be deleted.

Expanding / Collapsing Tracks

Tracks can be **EXPANDED** or **COLLAPSED**. An expanded track will show all of its subtracks, while a collapsed track will hide all its subtracks except for the first one. For an executor track, the first subtrack is always the executor command subtrack.
This functionality only affects the display. "Hidden" subtracks are always played back.

An expanded track is marked with a “+” in front of it, a collapsed track indicated by a “-“.
Click on this mark to change the expand/collapse status of the track.
The TRACK FUNCTIONS menu contains functions to expand/collapse all tracks simultaneously.

Selecting Tracks

Tracks can be SELECTED individually. A selected track is displayed in a darker colour.
Only selected tracks are shown in TEXT display mode. For some functions it is important whether a track is selected or not. For normal operations however, in graphic display mode, you do not have to worry about this.
Click on the track name cell (you may have to do this twice, because the first click is chooses the current track) or press the track encoder within the bar to change the selection status of a track.
The TRACK FUNCTIONS menu contains functions to select/deselect all tracks simultaneously. These functions are also available as direct “R” (Reset all tracks to unselected) and “S” (Set all tracks to selected) keys.
At the moment, selecting tracks does not affect the playback functionality, it is only a display and edit function. For future versions, however, we plan to have that as a special playback mode, to enable playback output for selected tracks.

Sorting Tracks

Perhaps you have a large number of tracks in your show, but currently you are only interested in some of them. Select these tracks and press the SORT key. The selected tracks will be sorted and displayed at the very top of the track display.
If you have selected all (or no) tracks and press SORT, they are sorted into their natural order, e.g. the order in which they appear on the console.
The sorting of tracks is part of the show and is stored with the show. It is only a display function and not affect playback functionality.

Adding Events

Graphically with the mouse:

- Choose the ADD mouse tool. The cursor will show an arrow with a large “+”.
- Click anywhere in a track. At the position you clicked with the mouse a new event will appear.
- To edit this new event right click on it.

With encoders and keys:

- Set the current time with the time encoder (first one) to where you want to add the event.
- Use the track encoder (second one) to select the track on which you want to add the event.
- Press the ADD HERE! key.
- At the given position, a new event will appear and now you are ready to edit the event.

When you are adding events on an executor command track, the timecode editor will try and predict the most likely command at that particular point in the track.
For example if you have an executor with a sequence, containing 3 steps, and you simply add one event after the other, it is assuming:
GOTO STEP1 , GOTO STEP2 , GOTO STEP3 , OFF
Or if you are adding a new event after a FLASH UP ON command, it will predict the new event as FLASH UP OFF.
For chaser, the editor never predicts GOTOs, instead it uses conventional Gos. The editor is also assumes, that you only want to switch the chase on, and then off again, regardless of how many steps the chase has.

Attention, mouse users:
Please be aware that if you have chosen the ADD mouse tool, this tool stays active. So wherever you click with the mouse – something will be added. If you switch on “always reset mouse tool” in the options menu, the risk of accidentally adding something is reduced.

Selecting Events

Events can be SELECTED individually. A selected event is displayed in red. All selected events together are called the selection. You can MOVE, DELETE or COPY this selection.

Selecting with the mouse in graphic mode:
- Choose the SELECT mouse tool. The cursor will show a selection frame.
- Left mouse click somewhere in a track, keep mouse key pressed, and drag a frame.
- Upon release of the mouse key, all events inside the frame are selected.

Selection with the mouse in text mode:
- Left mouse click somewhere in the list, keep mouse key pressed, and drag vertically a frame.
- Upon release of the mouse key, all text lines (events) inside the frame are selected.

With the CREATE SELECTION function:
- Press the CREATE SELECTION key, the CREATE SELECTION menu appears.
- Choose to either make a selection on the current (green) track only, or on all selected tracks.
- Choose one of the three commands:
- A) BEFORE TIME Events that are before the current time will be selected.
- B) ALL All events on given tracks will be selected
- C) AFTER TIME Events that are after the current time will be selected.

Selecting the Current Event

Only one event can be defined as the current event. In the graphic mode, this event will blink. In text mode, this text line (event) will be yellow. Its position is shown in the timecode control bar.
You can select the current event one way or the other:

Graphically with the mouse:
- Choose the SELECT mouse tool.
- Make a selection that contains only one event, or click only on one event.

With the encoders in the bar:
- Select the track with the track encoder (second one).
- Select the event with the event encoder (third one).

With the XY-encoder in text mode:
- Simply scroll through the list.

Deleting Events

Graphically with the mouse:
- Select the DELETE mouse tool. The cursor will show an arrow with a large “-“.
- Drag a frame or click on an event. Events that you click on or that are inside the frame will be deleted.

With the DELETE SELECTION key:
- Make a selection or select the current event.
- Then press ***DELETE SELECTION***. If more than one event is going to be deleted, you will be asked to confirm that.

Attention, mouse users:
Please be aware that if you have chosen the DELETE mouse tool, this tool stays active. So wherever you click with the mouse – it will be deleted. If you switch on “always reset mouse tool” in the options menu, the risk of

accidentally deleting something is reduced.

Moving Events

Graphically with the mouse:

- Choose the MOVE mouse tool. The cursor will show a hand with a little arrow. The corner of the arrow is the “hot spot” of the cursor.
- Left click INSIDE the selection or on an event and keep mouse key pressed.
- Drag the mouse horizontally. The selection/current event will follow.

With encoder within the bar:

- Make a selection or select the current event.
- Turn the MOVE encoder (furthest to the right). For every click of the encoder, you will move the selection/current event by one frame.
- If you press and turn the encoder for every click you will move one second.
- If you press it without turning, you can enter a new start time for your selection/current event. This input can be a relative movement if you use signs (“-1.5” will move your selection 1.5 seconds backwards in time).

In text mode:

- Edit the Time column (by right clicking with the mouse or press the XY-encoder).
- The movement will be relative if you use the signs, otherwise it will be absolute.

Editing an Event

You can only edit an already existing event (see Adding Events).
Editing an event means to change its data. If you want to change its time, look for MOVING EVENTS.

Graphically with the mouse:

- Right click on an event and the Edit menu appears according to the type of the event.

With the event encoder in the bar:

- Select current event with the track and event encoder.
- Then press the event encoder. Edit menus will appear.

In text mode:

- Scroll to the event that you are looking for.
- Edit the appropriate column by right clicking or pressing on the XY encoder. The parameter column is only editable for GOTO commands and for fader events.

Special fast edit for fader-events in graphic mode:

- This method is not exact enough for speeds, but for master fader events it is recommended.
- Click with the middle mouse key on an event and keep the mouse key pressed.
- Drag the mouse vertically with middle mouse key pressed. The value of the fader event will now follow.

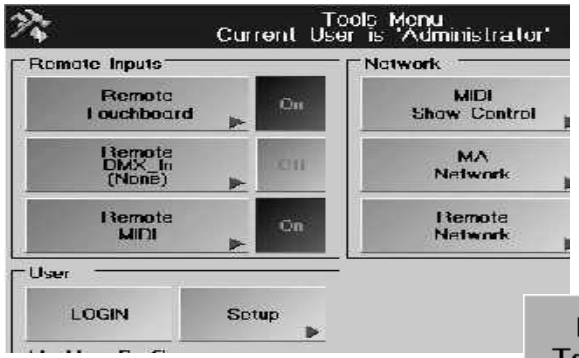
8.1.6 Special Procedures

Recording Crossfades

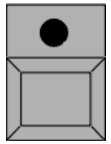
Crossfades for executors are recorded as a combination of commands and fader movements.
These commands are:

XGoUp Crossfade will start upwards
XGoDn Crossfade will start downwards
Xend Crossfade has ended

XGoUp and XGoDn have a **cue number as parameter**, just like a GOTO command, therefore a crossfade may start on any cue, not only on the next one.
Try to record a crossfade and have a look at the outcome. You will see, that the **global crossfade setting** CROSSFADE PERMANENT / RELOAD affects the recording.
In the first case, a pattern of XGoUp, XgoDn, XGoUp... Xend is recorded, while in the second case only XGoUps are recorded.
Nevertheless you can change the global crossfade mode afterwards without affecting the playback of your recorded timecode show.
If you edit a crossfade manually, be aware that the crossfade **fader movement alone does not do anything**. Although faders are moving, no crossfade is started. You have to place the crossfade commands on the command track to make the crossfade work.
Accordingly, if you want to move a crossfade in time, you have to **move both**, the fader events on the fader track and the crossfade commands on the command track.
At first glance, this procedure of recording a crossfade may seem to be complicated, but it has a lot of advantages:
- The crossfade commands are displayed in text mode, making crossfades more readable
- Crossfades relate to absolute cue numbers, like gotos.
- Crossfades are not destroyed by running fader data reduction
- You can jump into the middle of a crossfade, or run backwards into a crossfade, and it will be correctly initialised. (This will happen quite often when using external time code!)



TOOLS



8.2 Remote Control via Touchboard

On the rear of the ***grandMA***, there is a 25-pin SUB-D socket (DC REMOTE CONTROL) to connect a standard Touchboard with up to 16 channels.

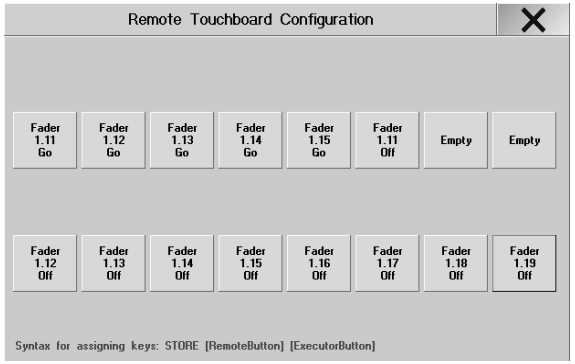
PIN 1 ... 16:	Input Channels 1 to 16
PIN 21+22:	+5 Volt (max. 100 mA Output)
PIN 17+18 und 24+25:	Earthing

The Touchboard input sockets only function as switches:

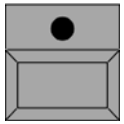
0 bis +2 Volt:	Off
+5 to +15 Volt:	On

8.2.1Assigning Playback keys

- press TOOLS .
- press TOUCHBOARD REMOTE



STORE

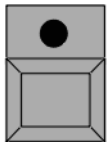


The menu REMOTE TOUCHBOARD CONFIGURATION displays the commands; „Empty“ means, that there is no command assingned to this button

- Press the STORE key once (LED is on).
- Press a key on the Touchboard, where a Playback key is to be assigned to, once.
- Select a key in the REMOTE CONFIGURATION menu. Press the Playback button that you want to assign. The selected button will now be assigned.

- In the TOOLS menu, you can switch the Touchboard function on or off using the ON / OFF key.

DELETE



Deleting assignment:

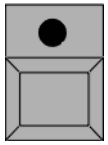
- press DELETE
- Press the Touchboard key or the appropriate key once.

The assigned playback keys will always be executed directly.
The assigned playback keys will be executed in combination with the previously selected commands.
Example: If an OFF key is programmed on a TOUCHBOARD key, but PAUSE is activated (**1.9** Layout and Controls, item 11), not the OFF command, but the PAUSE command will be executed when pressing this key.

8.3 Remote Control by DMX IN

DMX IN can be used to MERGE the signals of a second control board with those of the ***grandMA*** and transmit them to the stage via the same data line. If, during this process, channels from the ***grandMA*** and from the second control board are mixed up, only the higher value will be transmitted. DMX IN will only be linked to DMX OUT A and will not be output via Ethernet.
For DMX-Merge information **2.9.1**
Via the DMX IN socket, assigned commands can be called up from an external DMX console. The DMX input has only the function of a switch that will release at approx. 10%.

TOOLS



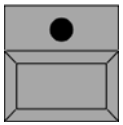
8.3.1 Assigning Playback Keys

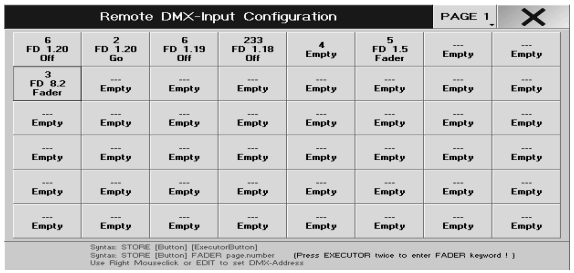
- Press the TOOLS key once.
- Call up the DMX-IN REMOTE CONFIGURATION menu using the REMOTE key.
- Press the STORE key once (LED is on).
- Select a key in the DMX-IN REMOTE CONFIGURATION menu.
- Press the Playback button that you want to assign. The selected button will now be assigned.

or:

- Enter the Executor Fader to be assigned using the Command Line (e.g.: „Executor Executor 1.5“ means Exe-Fader 5 on Page 1) and confirm with Enter.

STORE




Remote DMX-Input Configuration
PAGE 1
6 FD 1.20 Off
2 FD 1.20 Go
6 FD 1.19 Off
233 FD 1.18 Off
4 Empty
5 FD 1.5 Fader
3 FD 8.2 Fader
Empty
Syntax: STORE [Button] [ExecutorButton]
Syntax: STORE [Button] FADER page.number (Press EXECUTOR twice to enter FADER keyword !)
Use Right Mouseclick or EDIT to set DMX-Address

The assigned Playback buttons/Fader will be displayed on the individual keys. Only EXECUTOR buttons and faders can be assigned to the respective DMX channel.

8.3.2 Assigning DMX Channels

Make a right mouse click on the key. A menu will open in which you can assign one of the 512 DMX channels to this key. Identical DMX channels can be assigned to more than one key.
By pressing the PAGE 1 key, you can open another page (PAGE 2) with keys.

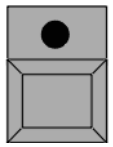
8.3.3 Deleting Assignments

- To delete an assigned Playback key, press the DELETE key once (LED is on). Press the respective DMX IN key once.

8.3.4 Using the DMX Input

In the TOOLS menu, you can switch the DMX input function on or off using the ON / OFF key.
If the DMX input is activated, you can use the assigned keys by switching on the respective DMX input. For clarity when looking at this window, the keys in the DMX-IN REMOTE CONFIGURATION menu will have a red background when switching on the respective DMX channel.

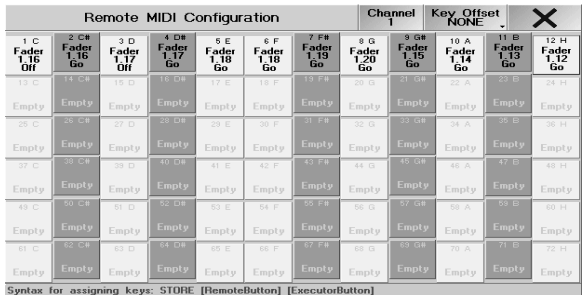
DELETE



The assigned playback keys will always be executed directly.
The assigned playback keys will be executed in combination with the previously selected commands.
Example: If an OFF key is programmed on a DMX-IN channel, but PAUSE is activated (**1.9** Layout and Controls, item 11), not the OFF command, but the PAUSE command will be executed when calling up this DMX-IN channel.

8.4 Remote Control by MIDI

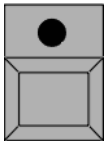
On the rear of the ***grandMA***, you will find the MIDI IN, MIDI THRU and MIDI OUT sockets. Assigned commands can be called up using e.g. an external MIDI keyboard or sequencer. Devices like these can be plugged into the Midi IN socket. Only note commands are currently supported. The incoming signals will be automatically transferred to MÍDI THRU. Also Midi Show Control (MSC) can be processed or sent.



8.4.1 Midi Show Control

The console can receive MSC commands which will be used to trigger the Master sequence only.
Push the key "Midi Show Control" within the Tools menu; the menu Configuraton Midi Show Control will be opened.
To receive MSC, set the device or the groups into the window „Midi IN". You can switch between Midi Enabled and Midi via Ethernet via the key below the window „Midi IN". After pushing the key „Store" all settings will be stored and the function will be started
To send MSC, set the device or the group into the window „Midi OUT". By the key „Send" you can change between sending Device, Group or ALL.. You can switch between Midi Enabled and Midi via Ethernet via the key below the window „Midi OUT". After pushing the key „Store" all settings will be stored and the function will be started.

TOOLS



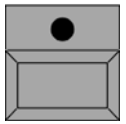
Remote MIDI

8.4.2 Assigning Playback Buttons

- Press the TOOLS key once.
- Call up the MIDI REMOTE CONFIGURATION menu using the REMOTE key.
- Press the STORE key once (LED is on).
- Select a key in the MIDI REMOTE CONFIGURATION menu.
- Press the Playback button that you want to assign. The selected button will now be assigned.

The assigned Playback buttons will be displayed on the individual keys of the MIDI REMOTE CONFIGURATION menu. Only EXECUTOR buttons can be assigned to the respective MIDI note.

STORE



Remote MIDI

Off

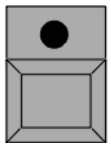
8.4.3 Selecting the MIDI Channel

Pressing the Channel key will open a menu in which you can select one of the 16 Midi channels by a mouse click.

8.4.4 Assigning the Pitch

By pressing the KEY OFFSET key, you can transpose the incoming notes by one octave downwards. This can be set for up to three octaves.

DELETE



8.4.5 Deleting Assignments

- To delete an assigned Playback button, press the DELETE key once (LED is on). Press the Key once.

8.4.6 Using the MIDI Input

In the TOOLS menu, you can switch the MIDI input function on or off using the ON / OFF Key.
If the MIDI input is active, you can call up the assigned keys by pressing the respective note keys on the MIDI keyboard. For optical convenience, the key in the MIDI REMOTE CONFIGURATION menu will have a red

background when pressing a note key.

.

Exec 1.11 Seq 161 'BMG P1' | Times | Loops & Links | Info

No.	Name	MIB	Trig	Loop	Lo.Del	Li.Del	Link
0.1	Preset		GO				
1	CAT at 50%	*	GO				
50	Preset Paint		1s				MiCtr 12.111
50.5	Bounce Light	*	GO				MiProg 23
51	Welding Mas	*	GO				MiNote 11.126

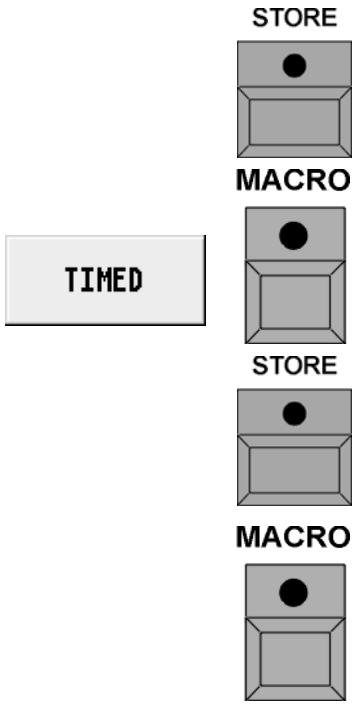
8.4.7 MIDIOUT

For MIDI_OUT Commands use the following syntax in the Command Line:

MIDI Note: MiNote 0-127, 0-127
MIDI Control: MiCtr 0-127, 0-127
MIDI Programm: Miprog 0-127

9 Macros und QUIKEYS

9.1 Creating Macros



With macros, you can combine sets of command line entries and key strokes for recalling in batchs. These can also be:
- Playback buttons (e.g. GO, Fader, Pause, etc., incl. number of the Executor)
- Call-ups of Views
- Call-ups of Delete operations
- Other Macro calls
- Call-ups of Clear operations

● Press the STORE key once (LED is on).
● Press the MACRO key once (LED is on). The SELECT MACRO window will open.
● Enter a name for the Macro using the keyboard.
- Press the TIMED key (will turn dark-gray) if the Macro is to be executed over the same amount of time as it takes to record it. The alternaitive is that the Macro will be played back as fast as possible.
● Confirm with ENTER.
LED in the MACRO key flashes.
Now, enter all operational steps to be executed by this Macro.
● To stop recording the macro press STORE, MACRO and then ENTER (LED in the MACRO key is now off).
This completes the MACRO Programming procedure.

9.1.1Activating Macros

● Press the MACRO key once (LED is on). Enter the number of a Macro via keypad and confirm with ENTER.The macro will now be executed.

Or:

● Press Edit (LED on) and one of the VIEW soft keys.
● Select MACRO from the assign a MACRO or a VIEW dialog box
● The SELECT window will open – select which MACRO you would like to assign.
Now the Macro has been assigned to the VIEW key and can be activated at any time.

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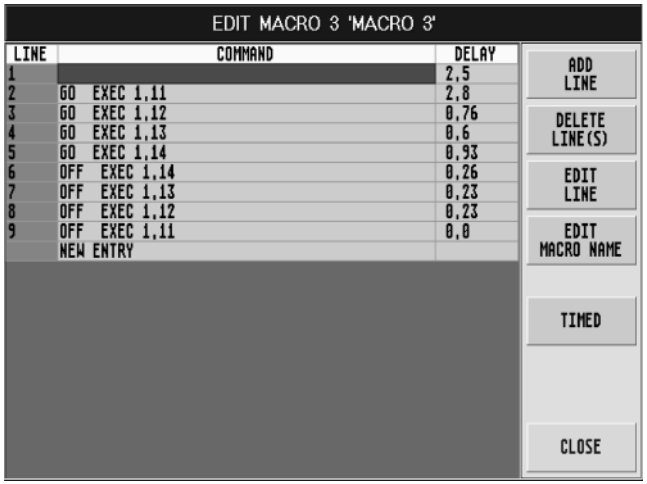
9.1.2 Macro Pool

In the Macro Pool you can call up Macros directly by touching directly on the display.
Make a right mouse click on an „empty“ position on one of the three TFT displays or on an external monitor. The CREATE A WINDOW menu will open. **3.1** Creating Windows.
Select MACRO pool and the MACRO window will open .
By press an MACRO soft key you can be activated at any time.



9.1.3 Editing Macros

● Press the EDIT key once. Select a Macro from the MACRO Pool.

Or:

● Press the EDIT key once. Press the MACRO key once, enter the Macro number and confirm with ENTER. The EDIT MACRO window will open.

– In the LINE column, the individual commands are numbered.
– In the COMMAND column, all stored commands are displayed one by one.
– For each command the time between steps where the macro was recorded is displayed in the DELAY column. This times can be edited or ignored for playback purposes.

● Pressing the ADD LINE key will insert a step in front of the chosen position. Now, you can enter a command using the text keyboard. If you want to use a Delay time when performing a command, click in the cell, enter a time using the keyboard, and confirm with ENTER.
● To delete a command, select one of the lines and press the DELETE LINE(S) key.
● To modify a command, select one and press the EDIT LINE key. Now, you can enter a new command.
● If you want to modify the Delay time, click into the cell, enter a different time using the keyboard, and confirm with ENTER.
● Pressing the EDIT MACRO NAME will open the EDIT NAME window. Now, you can enter a new name using the keyboard and confirm this with ENTER.
If the TIMED (MARCRO) key is switched on, the calls of this Macro will be executed with the set DELAY times. Pressing this key once will switch the display to MACRO NOT TIMED. In the Sheet, the DELAY times will be displayed on a dark background, and the Macro will be executed without delay times.
● You can leave the menu with the CLOSE key.

9.2 Assigning and Activating QUIKEYS

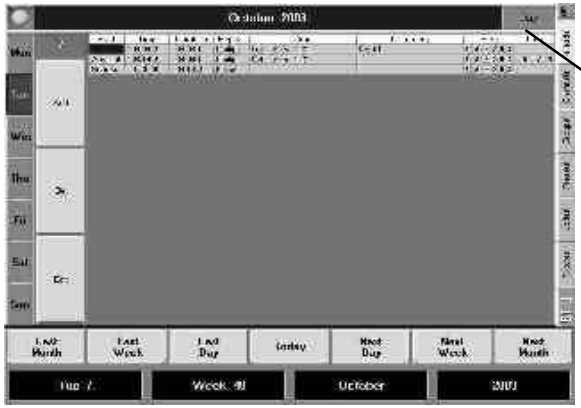
You can display and call up various keys, commands and functions using the QUIKEY pool (Display Softkeys).
Create a QUIKEY window **3.1** Creating a Window
Press the EDIT key and click or touch on a key in the QUIKEY pool .
or:
Make a right click with the mouse on a key. The QUIKEY OPTIONS pool will open.
Clicking on one of the functions will assign it to the key. Using this method it is possible to customise the console allowing quick and easy access to commonly used functions.

List of functions:

ALIGN OFF: Switches off the ALIGN function.
ALIGN LEFT: ALIGN key pressed once
ALIGN RIGHT: ALIGN key pressed twice
ALIGN BOTH: ALIGN key pressed three times
ALIGN SYM: ALIGN key pressed four times
CLEAR SELECTION: CLEAR key pressed once
CLEAR ACTIVE: CLEAR key pressed twice
CLEAR RELEASE: CLEAR key pressed three times
VALUES MODE: Switches the FIXTURE and CHANNEL SHEET to the VALUES mode
FADE MODE: Switches the FIXTURE and CHANNEL SHEET to the FADE time mode
DELAY MODE: Switches the FIXTURE and CHANNEL SHEET to the DELAY time mode
ASSIGN: ASSIGN key
EMPTY: Creates an empty key
FLIP:

● Moving Head Fixtures (this function is used to control the manner in which a Moving head fixture moves between two positions):
– Pressing 1x: The head will be turned so that it is pointing to the same position but with different values for Pan & Tilt. All lights that have 360 degrees or more of Pan and 270 degrees of tilt can point at the same position using two (or more) sets of Pan & Tilt values.
– Pressing 2x: For fixtures with more than 360 degrees of Pan, a third set of Pan and Tilt values is possible while still pointing to the same position on stage. If the fixture only has 360 degrees of movment it will return to its original position.
– Pressing 3x: The head will be returned to the original position. When using head Fixtures, the FIXTURE SHEET will show a yellow square left of the PAN value, symbolizing the current head position.
● Mirror Fitxures:
The PAN/TILT value will be inverted, the mirror will be positioned so to easily allow the creatation of symetrical looks.
– (minus): Minus key
STORE: STORE key
EDIT: EDIT key
UPDATE: UPDATE key
ESCAPE: ESCAPE key
ENTER: ENTER key
ALL SELECTION: Reselects **all** FIXTURES and CHANNELS (this is normally used after working with the NEXT/PREV).
ODD SELECTION: Selects all ***odd*** FIXTURES and CHANNELS
EVEN SELECTION: Selects all ***even*** FIXTURES and CHANNELS
INVERT SELECTION: Allows to invert the selection.
- If several fixtures are activated (values in red), but only some of those fixtures are currently selected (fixture name in yellow), you can deselect those fixtures and reselect all other fixtures will active values by pushing the INVERT SELECTION key and ENTER.

DELETE: Delete key
MOVE: MOVE key
COPY: COPY key
BACKUP: BACKUP key
SETUP: SETUP key
TOOLS: TOOLS key
PREVIOUS: PREV. key
NEXT: NEXT key
TRACKBALL SPEED: Toggles the TRACKBALL between coarse and fine.
ENCODER SPEED: Toggles the ENCODER between coarse and fine; further toggling is achieved by pressing on the ENCODER.



9.3 Agenda Menu

In this window you can set the time of day and date for the automatic execution of Macros. It is also possible to set relative trigger points using sunrise, sunset, dawn and dusk as a reference.

● You can select a different Edit Date by using the encoders or the keys on the display.

● Pressing this key, you can toggle between day, week, month or year in this display.

- If DAY is chosen, the ADD, DEL and EDIT keys will be displayed.

Pressing the ADD key will include a new column in the sheet, where you can set the programming for automatic control.

If a column is selected, you can delete it by pressing the DEL key.

If a cell is selected, you can change the function / time by pressing the EDIT key.

All created events will be displayed in this sheet.

Selecting a cell within a column and pressing the encoder will open a window where you can enter the following:

- Start:	Absolute:	The Macro will be started at the set time.
- Dawn:		The Macro will be triggered at the calculated time for dawn.
- Sunrise:		The Macro will be triggered at the calculated time for sunrise.
- Sunset:		The Macro will be triggered at the calculated time for sunset.
- Dusk:		The Macro will be triggered at the calculated time for dusk.

2.15 Menu TIME & DATE

Time: If ABSOLUTE is selected in this line under „Start“, a time can be set for the Macro to start.

If DAWN, SUNRISE, SUNSET or DUSK is selected in the start column, you can enter between -1 to +1 hour.

Consequently, the Macro will be started either 1 hour earlier or later than the calculated time.

Duration: If the unit is powered up later than the trigger time a setting in this column specifies the amount of time (up to 8 hours), after the original trigger time, that the macro should still be triggered.

Repeat: NONE will execute the event only once.

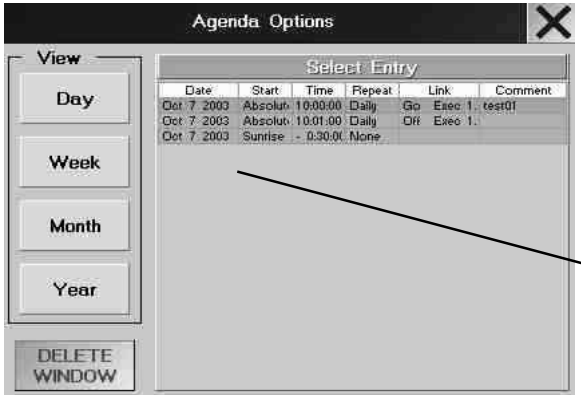
DAILY, WEEKLY, MONTHLY or YEARLY will execute the event repeataly according to the set frequency.

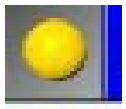
Link: Here you can specify which Macro is to be triggered by the event.

You can enter a comment, using the keyboard.

First: If an event is displayed with black background in the sheet, this Event will be repeated on the current day. This cell shows the date, on which the Event was first executed.

Last: Here, you can enter that last date that the Event will be executed. If an event is displayed with black background in the sheet, this event will be repeated on the current day. This cell shows the date, on which the event was last executed





Agenda Options

Touch the touch screen on the left corner of the title bar.

Or:

With a right click using the mouse on the title bar, you can open the Agenda Options window.

The table will show all created events. By clicking with the mouse or the encoder you can select and edit specific events

10 Command line

10.1 Introduction

The following chapter describes the functionality of the ***grandMA*** family of consoles that can be achieved using the command line.
"Command line operation" means using physical keys or the keyboard as opposed to using the mouse or touchscreen(s).

10.1.1 none

10.1.2 Quikeys

On some ***grandMA*** consoles, particularly the ***grandMA*** replay unit, you may not find all of the described hard keys. In spite of this small disadvantage, you can create a QUIKEY pool window on the screen and arrange the missing functions there. Then simply use these "soft keys" instead of the hard keys.

10.1.3 Double functions of hard keys

Some keys have more than one function due to space considerations. Some hard keys have an alternative function at the second or even the third push. These keys are

Hard key	First press	Second press	Third press
ASSIGN	ASSIGN	LABEL	
CHANNEL	CHANNEL	DMX	
EXEC	EXEC	FADER	
GOTO	GOTO	LOAD	
IF	IFOUTPUT	IF	
MOVE	MOVE	INSERT	
PRESET	PRESET	FEATURE	
TIME	FADE	DELAY	VALUE
VIEW	VIEW	VIEWKEY	
EFFECT	EFFECT	Call up an effect view	
GROUP	GROUP	Call up a submaster view	
PAGE	PAGE	Call up a total page view	

10.1.4 Messages

Sometimes the command line asks you a question upon the execution of a command. It can also inform you about something that went wrong with your command.
If such a message or a question window appears on the display, use the NEXT and PREVIOUS hard keys to select the appropriate answer (the key with the thick blue border) and then hit ENTER. Also ESC can be used for simple messages or warnings. If there is a more complex question and you hit ESC, the action is considered to be CANCELED.
Every command line action that succeeds will appear in the history of all command line windows.

10.1.5 Command line window

Of course you want to be able to see the commands that you give to your console. Open a command line window on the screen. There you can see what you enter and what you have entered previously.

10.1.6 Using the PC keyboard

Some users may find it convenient to use the PC keyboard for command line input. Open a command line window on the screen. Whenever this window has the input focus (title is shown in deep blue), all keystrokes of the PC keyboard go into the command line. If the input focus goes somewhere else, the PC keyboard will no longer work with the command line. Touching the title or the bottom line of the command line window will give the input focus back to it.
To permanently lock the the PC keyboard to command line input, press the SCROLL LOCK key. You will hear a beep and the SCROLL LOCK lamp will be on, indicating that the PC keyboard is now locked to command line operation.
If the PC keyboard is locked, you can not use it for other operations like naming presets etc. But another push of the SCROLL LOCK key will unlock it.
If you are using the PC keyboard as command line input, you can only enter valid commands and values. If you try to enter FIQQQ the command line will audiably warn you upon the entry of the First Q. This is because the only two commands that the command line recognises that start FI are FIXTURE or FIX.
In most cases it is not necessary to enter the full name of a keyword, the letter F is totally sufficient for FIXTURE. You can find all keywords and their shortest form in section 9.2 command overview.

10.1.7 Using the command line history

It is possible to recall previous commands from the history into the current command line.
There they can be re-executed or edited and executed.

a) - Left click with the mouse in the history of a command line window
- Or scroll with the XY encoder if the command line window has the focus
- Or use the UP and DOWN cursor keys on the PC keyboard if the command line window has the focus (or the PC keyboard is locked to the command line).
b) Edit the command line if you want
c) Press ENTER. The command line will be executed.

10.2 Command Overview

Here comes the complete list of all possible keywords in the command line.

Keyword: As it appears in the command line. 3.	**Shortcut:** Shortest possible form of the keyword when using PC keyboard.	**Hard key:** How to enter the keyword into the command line.	**Operation:** Short description of the meaning. For a more detailed explanation see chapter
+	+	+	Plus
-	-	-	Minus
<<<	<	<<<	Go Back with no time
>>>	>	>>>	Go Forward with no time
ALL	ALL	QUIKEY	All selection (with ODD/EVEN)
ALL_CHASES	ALL_C	CONSOLE	Accessing all executors with chases
ALL_SEQUENCES	ALL_S	CONSOLE	Accessing all executors with sequences
ASSIGN	AS	ASSIGN	Assign <source> <destination>
AT	A	AT	At , give value
CHANNEL	C	CHANNEL	Channel
CLEAR	CL	CLEAR	Progressively clear programmer
CLEAR_ACTIVE	CLEAR_A	QUIKEY	Deactivate programmer
CLEAR_ALL	CLEAR_ALL	QUIKEY	Total clear of programmer
CLEAR_SELECTION	CLEAR_S	QUIKEY	Clear selection
COPY	CO	COPY	Copy <source> at <destination>
CUE	CU	CUE	Cue
DEF_GO	DEF	Yellow GO	Go forward for default executor
DEF_GO-	DEF_GO-	Yellow GO-	Go back for default executor
DEF_PAUSE	DEF_P	Yellow Pause	Pause for default executor
DELAY	DELA	2 x TIME	Enter delay mode or give delay time
DELETE	D	DELETE	Delete <destination>
DMX	DMX	DMX	DMX address

DMX_BTN	DM	CONSOLE	Remote DMX button
EDIT	ED	EDIT	Edit <destination>
EFFECT	EF	EFFECT	Effect
ESC	ES	ESCAPE	Escape , close dialogs
EVEN	EV	QUIKEY	Even selection (with ALL/ODD)
EXEC	E	EXECUTOR	Executor
FADE	FADE	1 x TIME	Enter fade mode or give fade time
FADER	FADER	2 x EXEC	Fader, access executor faders
FADERBUTTON1	FADERBUTTON1	Hit Executor	Middle button of executor section
FADERBUTTON2	FADERBUTTON2	Hit Executor	Lower button of executor section
FADERBUTTON3	FADERBUTTON3	Hit Executor	Upper button of executor section
FEATURE	FE	2 x PRESET	Single feature like PAN
FIX	FIX	FIX	Fixing executors
FIXTURE	F	FIXTURE	Fixture
FLASH_DOWN	FLASH_D	CONSOLE	Downflash executor
FLASH_DOWN_OFF	FLASH_DOWN_O	CONSOLE	End of Downflash
FLASH_UP	FLASH_U	CONSOLE	Upflash executor
FLASH_UP_OFF	FLASH_UP_O	CONSOLE	End of Upflash
FORM	FO	CONSOLE	Form, used by effects
FULL	FU	FULL	Full, equals 100%
GO	GO	GO	Go forward
GO-	GO-	GO-	Go backwards
GOTO	GOT	GOTO	Goto <cue>
GROUP	G	GROUP	Group
IF	IF	2x IF	If (logical AND for selections)
IFOUTPUT	IFO	IF	If Output, create selection from output
INFO	INF	Exe-key	Info - Window

INSERT	I	2 x MOVE	Insert <source> at <destination>
INVERT selection	INV	QUIKEY	Invert <destination> , inverting
LABEL name	LA	2 x ASSIGN	Label <destination> “Name” give a
LEARN programs	L	LEARN	Learn, change speed of running
LOAD	LO	2 x GOTO	Load <Cue>
MACRO	M	MACRO	Macro
MIDI_BTN	MI	CONSOLE	Remote Midi Button
MOVE	MO	MOVE	Move <source> at <destination>
NEXT	N	NEXT	Next device of current selection
ODD	OD	QUIKEY	ODD selection (with ALL/EVEN)
OFF	OF	OFF	Off, switch something off
ON	ON	ON	On, switch something on
OOPS	O	OOPS	Oops, I made a mistake -> Undo
PAGE	PA	PAGE	Page
PAUSE	PAU	PAUSE	Pause something
PRESET	PR	PRESET	Preset type or Preset
PREVIEW	PREV	PREVIEW	Preview something
PREVIOUS	P	PREVIOUS	Previous device of current selection
SELECT executor	SE	SELECT	Select <executor> , select default
SEQU	S	SEQU	Sequence (Cuelist)
STORE	ST	STORE	Store
SWOP	SW	CONSOLE	Swop executor
SWOP_OFF	SWOP_O	CONSOLE	End of swop
TEMP	TE	TEMP	Temporary run executor

THRU	T	THRU	Through, to enter ranges
TIMECODE	TI	CONSOLE	Timecode show
TOGGLE	TOG	CONSOLE	Toggle running status of executor
TOP	TOP	TOP	Call first cue of executor
TOUCH_BTN	TO	CONSOLE	Remote Analog input button
UNPRESS	UN	CONSOLE	Release of command
UPDATE	U	UPDATE	Update
VALUE	VA	3 x TIME	return to value mode
VIEW	V	VIEW	View, contents of one or multiple screens
VIEWBTN	VIEWB	2 x VIEW	Viewbutton, hardkey beside screens

10.3 Command Reference

In this chapter, all commands are explained along with their syntax, demonstrating all possibilities of using comand line entry.

10.3.1 Key word classifications

In the following descriptions, the term ***starting keyword*** will appear often.

This “starting keyword” is a keyword that you start a new command line operation with.

Basic operational keywords

A basic operational keyword in the command line determins a basic operation.

These keywords can only appear as starting keyword in the command line.

The only exception from this rule is the AT command. AT can follow a list of object keywords and will still be interpreted as operational keyword.

Operational keywords expect object keywords as targets for their operation. Sometimes they also use helping keywords.

Keyword	Operation
ASSIGN	Assign one object to another, like assigning a sequence to an executor.
AT (operational form)	Set a value to something.
COPY	Make a copy of an object.
DELETE	Delete an object.
EDIT	Edit an object.
IFOUTPUT	Create a selection depending on an objects stage output.
INSERT	Insert an object at another location.
INVERT	Invert the selection.
LABEL	Change name of an object
MOVE	Move an object to another location.
PREVIEW	Have a look at an object without stage output.
STORE	Store data into an object.
UPDATE	Update data of active object. Active objects create stage output.

Executing Keywords

Executing keywords may be used as starting keywords, or as source in an assign operation. As starting keywords they expect object keywords as targets for their operations.

Keyword	Operation
<<<	Go back with no time
>>>	Go forward with no time
FIX	Fix an executor. This executor will ignore page changes.
FLASH_DOWN ~_OFF	Temporary down flash of executor.
FLASH_UP ~_OFF	Temporary up flash of executor
GO	Go forward.
GO-	Go backwards
GOTO	Goto cue
LEARN	Learn speed
LOAD	Prepare next step of executor, wait for GO.
OFF	Switch off something.
ON	Switch on something.
PAUSE	Pause
SELECT	Select default executor.
SWOP ~_OFF	Temporary up flash for executor and downflash for all others.
TEMP	Temporarily run an executor.
TOGGLE	Toggle executor on and off.
TOP	Goto first cue.

Object Keywords

Object keywords are used as targets by basic operational keywords and by executing keywords. They represent data, that can be manipulated.

Keyword	Meaning
ALL_CHASES	All executors assigned as chasers.
ALL_SEQUENCES	All executors assigned as sequence.

CHANNEL	A conventional light.
CUE	One step or memory of a cuelist.
DMX	A DMX channel.
DMX_BTN	A Remote triggered by incoming DMX signals.
EFFECT	An freely editable effect generator.
EXEC	An executor is the physical front end for executing sequences etc.
FADER	A executor fader.
FADERBUTTON1	The middle button of an executor column.
FADERBUTTON2	The lower button of an executor column.
FADERBUTTON3	The upper button of an executor column.
FIXTURE	A complex light that has more than just a dimmer channel.
FEATURE	A feature inside a fixture, like PAN or IRIS.
FORM	A 1 or 2 dimensional path, used by effects.
GROUP	A collection of fixtures and channels.
MACRO	Can do complex command line operations.
MDI_BTN	A Remote triggered by incoming MIDI signals.
PAGE	A page is one set of visible executors.
PRESET	A memory that can be used indirectly as a placeholder.
SEQU	A sequence consists of one or more cues.
TIMECODE	A timecode show consists of many timed playback instructions for executors. Can be synchronised with incoming SMPTE or MIDI signals.
TOUCH_BTN	A Remote triggered by hardwired analogue 0/10 V inputs.
VIEW	Stores a display arrangement.
VIEWBTN	A physical button that can call views and macros.

Helping keywords

Helping keywords are context sensitive and thus have different functions depending on where they are used and what they are used with.

Keyword	Used ...
+	Everywhere ...
-	Everywhere ...
AT (helping form)	by COPY/MOVE etc.
DELAY	In executing commands ,AT, STORE etc
FADE	In executing commands, AT,STORE etc
FULL	As value 100 %
IF	In selections
THRU	In ranges
UNPRESS	After executing keywords

Immediate Keywords

These keywords expect no additional parameters.

Keyword	Operation
ALL	Restores selection after ODD/EVEN NEXT/PREVIOUS.
CLEAR	Progressively clear the programmer.
CLEAR_ACTIVE	Clear the values in the programmer.
CLEAR_ALL	Totally clear programmer at once.
CLEAR_SELECTION	Clear the current selection.
DEF_GO	Go forward for default executor
DEF_GO-	Go back for default executor
DEF_PAUSE	Pause the default executor.
ESC	Escape from input or menu.
EVEN	Select even devices inside current selection.
NEXT	Select next device inside current selection.
ODD	Select odd devices inside current selection.

OOPS	Oops, I mad a mistake -> Undo
PREVIOUS	Select previous device inside current selection
VALUE	Switch back from fade or delay to value mode.
UPDATE	Update data of active object. Active objects create stage output.

The DEFAULT keyword

The command line has a DEFAULT keyword.
Whenever you ***start a new command line with numeric values***, this default keyword will be used.

Assume that the default keyword is CHANNEL. When you type in:
1 ENTER. In the command line will appear CHANNEL 1 ENTER.

If the command line is empty, the current default keyword is shown by:
a) LED in the physical key
b) the command line window

The following keywords can be the default keyword:

CHANNEL *	PAGE
FIXTURE *	MACRO
GROUP	PRESET
SEQU	VIEW
CUE	EFFECT
EXEC	

The default keyword is also used by operational keywords.

Assuming that the default keyword is GROUP. Then you are typing in:

DELETE 1 ENTER. As a result, GROUP 1 will be deleted !

An exception to this are the keywords CHANNEL and FIXTURE. If they are the default keywords, operational keywords will use CUE as the default keyword !

If CHANNEL is the default keyword. STORE 5 ENTER will do STORE CUE 5 !

10.3.2 Ranges and Range Lists

Many commands are able to operate on a list of objects.
Instead of typing
DELETE SEQU 1 ENTER
DELETE SEQU 2 ENTER
DELETE SEQU 10 ENTER
you can write
DELETE SEQU 1 THRU 2 +10 ENTER.

A range can have the following formats:

X	only object X
X THRU Y	from object X to object Y
X THRU	from object X to the last object (very dangerous!)
THRU Y	from the first object to object Y (very dangerous!)
THRU	all objects (very dangerous!)

Please note that ranges have a direction. This is particularly important when creating selection. FIXTURE 1 THRU 10 is very different than FIXTURE 10 THRU 1.

Ranges can be combined to Range Lists:
OBJECT_KEYWORD Range1 +/- [OBJECT_KEYWORD] Range2 ...
It is not necessary to repeat the OBJECT_KEYWORD in the range list.

10.3.3 Detailed keyword list

+ (Plus)

Classification *:* helping keyword
a) As starting keyword, + enlarges the current selection. Everything that follows after the plus will be interpreted as a selection:
+ CHANNEL,FIXTURE,GROUP,SEQU,CUE,EXEC,PRESET,EFFECT
b) In object lists it is including objects:
... OBJECT 1 + OBJECT 2 ....
c) In front of values it is changing the value to a positive relative value:
CHANNEL 1 AT +10 ENTER will increase the dimmer value by 10%.
d) As a starting keyword, and **repeated**, + is increasing the dimmer values of the current selection by 10% every time you press +.

- (Minus)

Classification *:* helping keyword
a) As starting keyword, - reduces the current selection. Everything that follows after the minus will be interpreted as a selection:
- CHANNEL/FIXTURE/GROUP/SEQU/CUE/EXEC/PRESET/EFFECT
b) In object lists it is excluding objects:
... OBJECT 1 THRU 10 - OBJECT 2 ....
c) In front of values it is changing the value to a negative relative value:
CHANNEL 1 AT -10 ENTER will decrease the dimmer value by 10%.
As a starting keyword, and **repeated**, - is decreasing the dimmer values of the current selection by 10% every time you press -.

<<< (Go backwards with no time)

Classification : executing keyword
a) **As starting keyword**, every object that follows after the <<< will try to **go back** one step with **zero fade time**.
<<< (target object list) [ENTER]

Target type	Operation
EXEC	Go backwards one step with no fade time
EFFECT	Start running backwards without fading in
TIMECODE	Jump to the previous breakpoint
PAGE	Does a <<< on all executors on that page.
SPEEDMASTER (executor assigned to a speed master)	Does a <<< on all chases using that speed master

b) In an assign command***, this function can be put on an executor button (see ASSIGN).***

>>> (Go forward with no time)

Classification *:* executing keyword
c) As starting keyword***, every object that follows after the >>> will try to*** go forward ***one step with*** zero fade time.
>>> (target object list) [ENTER]

Target type	Operation
EXEC	Go forward one step with no fade time
EFFECT	Start running forward without fading in
TIMECODE	Jump to the next breakpoint
PAGE	Does a >>> on executors on that page.
SPEEDMASTER (executor assigned to a speed master)	Does a >>> on all chases using that speed master

d) **In an assign command**, this function can be put on an executor button (see ASSIGN).

ALL

Classification : immediate keyword
ALL is clearing any sub-selection made with ODD EVEN NEXT and PREVOIUS.

ALL_CHASES

Classification : object keyword

ALL_CHASES is an alias for the expression ALL EXECUTORS THAT ARE ASSIGNED AS CHASES. It can be used wherever EXEC could be used. Example:
PAUSE ALL_CHASES ENTER

ALL_SEQUENCES

Classification : object keyword

ALL_SEQUENCES is an alias for the expression ALL EXECUTORS THAT ARE ASSIGNED AS SEQUENCE. It can be used wherever EXEC could be used. Example:
OFF ALL_SEQUENCES ENTER

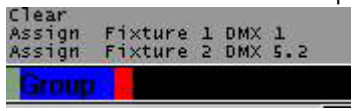
ASSIGN

Classification : operational keyword

ASSIGN (source objects) (destination objects) [ENTER]
Source objects : a list of objects which are of the same type.
Destination objects: a list of objects which are of the same type

Source object type	Possible destination object type
Executing keyword	EXEC,FADERBUTTON1/2/3
SEQUENCE	EXEC,FADERBUTTON1/2/3
GROUP	EXEC,FADERBUTTON1/2/3
EFFECT	EXEC,FADERBUTTON1/2/3
VIEW	VIEWBTN
MACRO	VIEWBTN

Executor buttons and view buttons as hard keys automatically perform the ENTER.
Fix _№ DMX_№
to patch or repatch fixtures



DMX number

DMX 1 = absolute DMX number
DMX 1.2 = Universum number.

ASSIGN TIME

ASSIGN (Time)(value) (target) [ENTER] to set times in Cues
ASSIGN FADE (press TIME button once)
OUTFADE (press TIME button 2x)
DELAY (press TIME button 3x)
OUTDELAY (press TIME button 4x)
SNAPDELAY (press TIME button 5x)
Cue (№) for the Default Executor
Cue (№) Executor (№) for the respective Executor

You can also enter multiple times for several Cues of a sequence at the same time, e.g. ASSIGN FADE 3 DELAY 8 OUTDELAY4 CUE 1 THRU 4 EXEC 2.4

AT

Classification : operational and helping keyword

a) As operational keyword:

AT TYPE 1: Inputing dimmer values directly

[(destination objects)] AT values [FADE fades] [DELAY delays] ENTER
Destination objects: A list of objects that can create selections. Usable keywords are: CHANNEL,FIXTURE,GROUP,SEQU,CUE,PRESET,EFFECT.
If no destination objects are given, the current selection will be used.
Values: VALUE_X [THRU VALUE_Y] in percent
Fades: FADE_X [THRU FADE_Y] in seconds
Delays: DELAY_X [THRU DELAY_Y] in seconds
Values, fades and delays are decimal numbers with dots (e.g. FADE 1.5).
Examples:
CHANNEL 1 THRU 10 AT 20 FADE 2.5 DELAY 0 THRU 5 ENTER
Will put channels 1 through 10 at 20% and give them all a fade time of 2.5 seconds. It will also stagger a delay time across all 20 channels, with channel 1 having the longest delay time and channel twenty having no delay time at all.
CUE 1 AT FULL ENTER
This will set the dimmer of all devices contained in CUE 1 of the default executor to 100%.

AT TYPE 2: Copying values with filtering:

[(destination objects)] AT [set AT filtering] (source objects) ENTER
Destination objects: Same as above.
Source objects: A list of objects that can supply values. Usable keywords are: CHANNEL,FIXTURE,GROUP,SEQU,CUE,PRESET.
Set AT filtering: Keep AT pressed. After half a second the AT filter menu will appear. Change the filtering while you keep AT pressed.
If the source objects are CHANNEL, FIXTURE or GROUP, the operation will be a

FILTERED COPY INSIDE THE PROGRAMMER All values except default values will be copied if they pass the filter !

Examples:

FIXTURE 2 THRU 10 AT (select CMY colour mixing) FIXTURE 1 ENTER
This command will copy the CMY colour of fixture 1 to fixtures 2 THRU 10.
You can copy patterns: Set fixture 1 to BLUE and fixture 2 to GREEN.
FIXTURE 3 THRU 10 AT (select colour) FIXTURE 1 THRU 2 ENTER
Fixture 3 will be BLUE, 4 is GREEN, 5 is BLUE, 6 is GREEN ...
Source and destination devices can overlap:
FIXTURE 1 THRU 10 AT (select all features) FIXTURE 2 THRU 10 + 1 ENTER
This will perform a circular copy, shifting the values from device to device.
If the source objects are SEQU,CUE or PRESET, the operation will be a

FILTERED EXTRACTION TO THE PROGRAMMER
All values that exist in the source for the destination devices will be copied if they pass the filter !

Examples:
FIXTURE THRU AT (select PAN/TILT) CUE 1 ENTER.
This will bring all PAN/TILT information contained in CUE 1 of the default executor active into the programmer.
CUE 5 AT (select GOBO) CUE 4 ENTER.
Devices of cue 5 get the gobos of cue 4 (of course only if the gobos were programmed into
cue 4).
CUE 5 AT (select GOBO) CUE THRU 4 ENTER
Devices of cue 5 get the gobos **of the STATUS** of cue 4 ! This is very different to the
previous example !!!
b) **As helping keyword**: See COPY MOVE and INSERT.

2x AT

Will set the defaul value for selected fixtures (set in SETUP / DEFAULTS/ DEFAULT AT)

CHANNEL

Classification : object keyword
a) **as starting keyword**:
CHANNEL ENTER
CHANNEL becomes the DEFAULT KEYWORD.
CHANNEL (range list) ENTER
Select channels in range list.
CHANNEL (range list) AT ... (see AT)
Apply values to channels in range list.
Channel numbers in the range list must be in the interval [1 ... 9999].
b) **as target for the following executing commands**:

ON activate dimmer value in programmer.

OFF deactivate dimmer value in programmer and deselect channel.

PAUSE PARK dimmer value of channel.

GO UNPARK dimmer value of channel.

CLEAR

Classification : immediate keyword
Progressively performs:
1) If there is a selection -> CLEAR_SELECTION
2) If there is an activation -> CLEAR_ACTIVE
3) If there is stage output from programmer -> CLEAR_ALL

CLEAR_ACTIVE

Classification : immediate keyword
Clears the activation in the programmer without destroying stage output.

CLEAR_ALL

Classification : immediate keyword
Clears the selection.
Clears the activation.
Clears the programmer totally, all values returned to default or to playback control.
ODD/EVEN/Sub-selection is reset to ALL.

CLEAR_SELECTION

Classification : immediate keyword
Clears the selection. No device is selected.
ODD/EVEN/Sub-selection is reset to ALL.

COPY

Classification : operational keyword
COPY (source objects) AT (destination objects) [ENTER]
Source objects : a range list of objects which are all of type X.
Destination objects: a range list of objects which are all of type Y
Object types X and Y must be equal or compatible.
Source object types Compatible destination object

types

EXEC	EXEC
FADERBUTTON/123	FADERBUTTON/1/2/3
DMX_BUTTON	DMX_BUTTON
MIDI_BUTTON	MIDI_BUTTON
TOUCH_BTN	TOUCH_BTN

Currently there are some limitations for copying CUES:

1) A range list of cues can be
   a. A single cue e.g. CUE 1
   b. A range of cues. e.g. CUE 1 THRU 10
2) Also the destination object must be a CUE.
   Therefore the syntax COPY CUE 1 SEQU 1 AT SEQU 2 ENTER is not allowed.

Instead you must write COPY CUE 1 SEQU 1 AT CUE 2 SEQU 2 ENTER.
Please note, that CUE 1 SEQU 1 equals the term SEQU 1 CUE 1. Whenever the term contains CUE, you are copying CUES !

CUE

Classification : object keyword
General Format:

Expression	Normal meaning	In case of STORE
CUE	Current active cue of running default executor	New cue at the end in default executor
CUE X	Cue X of default executor	
CUE X SEQU Y	Cue X of sequence Y	
SEQU Y CUE X	Same as above !	
CUE EXEC Z	Current active cue of running executor Z	New cue at the end in executor Z
CUE X EXEC Z	Cue X of executor Z	

X Cue number in format A.B with intervals [0...999].[0...999] , B is optional. “CUE 0” is invalid, but “CUE 0.5” is valid.
Y Sequence number in interval [1 ... 999]
Z Executor number in format PAGE.INDEX with intervals [1 ... 64].[1...60] , or in format INDEX with interval [1...60] using current page.

Either X or Y,Z can be range lists. Range lists with X and Y,Z are not allowed. Therefore:
CUE 1 THRU 10 SEQU 1 is valid
CUE 1 TRUE 10 SEQU 1 THRU 5 is invalid

a) **as starting keyword**:
CUE ENTER
CUE becomes the DEFAULT KEYWORD.
CUE (range list) ENTER
Select devices included in cue(s).
CUE (range list) AT ... (see AT)
Apply values to devices included in cue(s).

b) **as target for the following operational commands**:

AT	Extract data from cue
COPY	Copy one cue to another
DELETE	Delete a cue
EDIT	Edit a cue
IF	Select devices which are Part of the cue.
IFOUTPUT	Search for stage output of cue
INVERT	Invert selection of cue
LABEL	Change name of cue
MOVE	Move cue to another position
PREVIEW	Preview cue

c) **as target for the following executing commands**:

ON	activates content of cue in programmer.
OFF	deactivate content of cue in programmer.
PAUSE	PARK all features included in cue.
GO	UNPARK all features included in cue.
LOAD	Prepare cue X as next cue for executor Z.
GOTO	Executor Z is calling cue X

DEF_GO

Classification : immediate keyword
Is performing a GO on the default executor.

DEF_GO-

Classification : immediate keyword
Is performing a GO- on the default executor.

DEF_PAUSE

Classification : immediate keyword
Is performing a PAUSE on the default executor.

DELAY

Classification : helping keyword

a) With executing keywords and executors

(Executing keyword) (Executor List) DELAY X.X ENTER
The execution command is performed on all listed executors with a snap delay overwrite of X.X seconds. Does not work with PAUSE or flashing commands.

b) Giving individual delay times to fixtures or channels: [Selection] AT DELAY X.X [TRHU Y.Y] ENTER
Individual delays for the feature shown in the preset bar will be set to X.X seconds.
If no selection is given, the current selection is used.
Please note that the given delay may be a range. In this case, delays will be aligned over the given selection.
The given delays can be signed, which will result in relative changes of individual delays.
Giving individual delays can be combined with giving individual fades and values into one AT command.

c) Clearing individual delays:
[SELECTION] AT DELAY ENTER
Works very much like b), but no value for the delay is given.

d) Setting default snap delay:
(No selection present) DELAY X.X ENTER
The next cue will be stored with X.X seconds snap delay default for all snap channels.

e) As snap delay when storing a cue:
STORE (List of Cues) DELAY X.Y ENTER
The given cues will be stored with a snap delay default of X.Y seconds for all snap channels.

f) Switching to delay display mode:
DELAY ENTER
All sheets wich are set to AUTO display mode, will display delays instead of values. This effect is only temporary. All sheets will switch back to value mode upon ending of the next command line operation.

DELETE

Classification : operational keyword
DELETE (object list) ENTER
Some forms of delete will need no ENTER in the end:
DELETE (hit key in a pool)
DELETE [CUE] X (hit executor button)
DELETE (hit viewkey)
All objects in the list must be of the same type. You can not delete a preset and a cue at the same time.
Deleting an object that is assigned to an executor will also delete the executor.
Deleting an object that is assigned to a viewkey will also delete the viewkey.

Object	Comment
CUE	If no sequence or executor is specified, the sequence of the default executor is used. If the last cue of a sequence is deleted, the whole sequence is deleted.
DMX_BTN	
EFFECT	Do not delete effects which are used by sequences.
EXEC	Deleting an executor does not delete the sequence, group etc. assigned to it.
FORM	Do not delete forms which are still in use byeffects.
GROUP	Deleting a group will also delete its submaster functionality.
MACRO	You can not delete a macro that is currently recording.
MIDI_BTN	
PAGE	Deleting a page will delete all executors on that page.
PRESET	Deleting single presets is done with the syntax PRESET X.Y with X=preset type and Y=preset number. DELETE PRESET X will ask for confirmation and delete all presets of the given type.
SEQU	
TIMECODE	
TOUCH_BTN	
VIEW	
VIEWBTN	

DMX

Classification : object keyword
NOT IMPLEMENTED YET.
DMX is accessing directly a DMX address.

DMX_BTN

Classification : object keyword
A DMX_BTN (dmx button) is a remote function triggert by incoming DMX signals.
The DMX_BTN simulates an executor keypress, therefore it is working only in combination with an assigned executor. DMX_BTNs can be seen under TOOLS / REMOTE DMX menu.
Calling a DMX_BTN manually:
DMX_BTN X ENTER
Linking a DMX_BTN to an executor:
STORE DMX_BTN X EXEC/FADEREBUTTON1/2/3 Y.Z ENTER
Using EXEC in this command will always link the remote to the middle executor button.

X must be in the range from 1 to 96.

EDIT

Classification : operational keyword

a) Simulating a right click of the mouse for editing an input field or a cell in a grid:

EDIT (use touchscreen to click somewhere) or
EDIT (left-mouse-click somewhere)

b) Starting EDIT / UPDATE procedure:

The whole procedure works as follows:

- EDIT object ENTER
- Only one object can be edited at once. If the edit / update procedure is still running for another object, you will be asked to update the old one first.
- Programmer is cleared, and the values and selection of the object is loaded into the programmer.
- All titles of fixture and channel sheet will show the name of the "edit object".
- Change values and selection in the programmer as required.
- UPDATE starts flashing as soon as values are changed.
- Hit UPDATE. You will be asked for a confirmation and then changed values and selection is stored back into the object.
- ESC will quit the EDIT / UPDATE procedure without updating the object at any time.

Objects that can be edited in this way are:

Syntax, start with EDIT ...	Comment
CUE ENTER	Edit active cue of default executor
[CUE] X ENTER	Edit cue X of default executor
CUE X SEQUENCE Y ENTER CUE X EXEC Y.Z ENTER CUE X (hit executor)	
SEQUENCE X ENTER or hit key in sequence pool window	Will edit first cue of sequence X
GROUP X ENTER or hit key in the group pool window	Although a group has no values, the selection can be edited.
PRESET X ENTER or hit preset type on the preset control bar of fixture sheet. PRESET X.Y ENTER or hit key in preset pool window	Will edit first non-empty preset of type X

c) Continue EDIT / UPDATE procedure with NEXT / PREVIOUS object:

EDIT NEXT [ENTER]
EDIT PREVIOUS [ENTER]
If you use the NEXT and PREVIOUS hard-keys, ENTER is not necessary.
Next and previous will continue edit/update with the next/previous non-empty object in the context of the current "edit object".
Examples:
- EDIT PRESET 1 ENTER. Starts edit/update for first non-empty PAN/TILT preset.
EDIT NEXT goes on to the next non-empty PAN/TILT preset.
- EDIT SEQUENCE 1 ENTER. Starts edit/update for first cue.
EDIT NEXT goes on to second cue.
Together with the HIGHLIGHT function, EDIT NEXT is a very powerful tool to for checking your stage presets.

d) Opening an edit screen:

Some objects can not be edited in the programmer. They have edit screens to manipulate them. Only one edit menu for only object can be open at one time. If you open an edit menu for an object, all other edit menus will close. Edit menus can be closed with the ESC key.

EDIT EFFECT X ENTER	or	EDIT (hit key in effect pool)
EDIT EXEC X.Y ENTER	or	EDIT (hit executor)
EDIT FORM X ENTER	or	EDIT (hit key in form pool)
EDIT MACRO X ENTER	or	EDIT (hit key in macro pool)
EDIT TIMECODE X ENTER	or	EDIT (hit key in timecode pool)

EFFECT

Classification : object keyword

a) as starting keyword:

EFFECT ENTER
EFFECT becomes the DEFAULT KEYWORD.
EFFECT (range list) ENTER
Start effects in range list.

Effect numbers in the range list must be in the interval [1 ... 999].

Effects are numbered in a certain way:

Range	Meaning
1 ... upwards	User created effects
899 ... downwards	Automatic created effects used by cuelists
900 ... upwards	Temporary effects, created from preset effects. These effects are not visible in pools.

b) as target for the following operational keywords:

ASSIGN	Assign an effect to an executor
COPY	Copy one effect to another

DELETE	Delete an effect
EDIT	Open edit menu for effect
IF	Deselect devices that are not included in effect
IFOUTPUT	Select devices that have stage output from the effect

INSERT/MOVE Change visible number of effect
LABEL Change name of effect

c) as target for the following executing commands:

GO	Run forward, start with fade in
GO-	Run backwards, start with fade in
>>>	Run forward, no fade in
<<<	Run backwards, no fade in
PAUSE	Pause, stand still
OFF	Switch off, fading out

ESC

Classification : immediate keyword

ESC (Escape) will progressively perform the following actions:

a) Is there something in the command line ? Yes -> clear commandline !
b) Is edit/update procedure running ? Yes -> cancel edit update
c) Is there an open window or a message box ? Yes -> close it !
d) Is there an edit menu open ? Yes -> close it !

EVEN

Classification : immediate keyword

EVEN creates a sub-selection from the current selection.
If you have selected 10 fixtures and then select **EVEN**, only the 2nd, 4th,6th,8th and 10th fixture in this selection stays selected. The others have become "temporarily deselected", waiting to be fully selected again by the **ALL** command.

EXEC

Classification : object keyword

Format	Meaning
EXEC X [THRU [Y]]	Executors X to Y of current page
EXEC P.X [THRU [Q.Y]]	Executors X of page P to exec Y of page Q
EXEC X [THRU [Y]] PAGE P [THRU [Q]]	Executor X to Y of page P to Q

- Executor number X/Y must be in the range of [1 .. 60] where [1..20] is adressing the motorized fader executors and [21 .. 60] is addressing the button executors.
- Page numbers P/Q must be in the range of [1 .. 64].

a) as starting keyword:

EXEC ENTER
EXEC becomes the DEFAULT KEYWORD.
EXEC (range list) ENTER
Select devices included in objects to given executors.
EXEC (range list) AT ... (see AT)
Apply values to devices included in objects assigned to given executors.

b) as target for the following operational commands:

ASSIGN	SEQUENCE,GROUP and EFFECT objects can be assigned with the command line to an executor. EXECUTING COMMANDS can be assigned with the command line to an executor´s button. For fader executors, the keyword EXEC specifys the middle key.
COPY	Copy one executor to another
DELETE	Delete an executor. This does not destroy the object that is assigned to the executor.
EDIT	Edit the object that is assigned to the executor.
IF	Deselect devices which are not part of executor´s object´s selection.
IFOUTPUT	Select devices which have stage output from this executor
INVERT	Invert current selection by the selection of executor´s object.
LABEL	Change name of executor´s object.
MOVE	Move executor to another position
PREVIEW	Preview executors object. If the object is a sequence, and the executor is running, the next cue will be previewed.

c) as target for ALL executing commands.

Please look at **9.3.1 Executing Keywords** for a summary or look at those keywords for details.

FADE

Classification : helping keyword

a) With executing keywords and executors
(Executing keyword) (Executor List) FADE X.X ENTER
The execution command is performed on all listed executors with a fade overwrite

of X.X seconds. Does not work with PAUSE or flashing commands.

b) Giving individual fade times to fixtures or channels:
[Selection] AT FADE X.X [TRHU Y.Y] ENTER
Individual fades for the feature shown in the presetbar will be set to X.X seconds.
If no selection is given, the current selection is used.
Please note that the given fade may be a range. In this case, fades will be aligned over the given selection.
The given fades can be signed, which will result in relative changes of in dividual fades.
Giving individual fades can be combined with giving individual delays and values into one AT command.

c) Clearing individual fades:
[SELECTION] AT FADE ENTER
Works very much like b), but no value for the fade is given.

d) Setting default in & outfade:
(No selection present) FADE X.X ENTER
The next cue will be stored with X.X seconds basic fade and outfade for all non-snap channels.

e) As in & outfade when storing a cue:
STORE (List of Cues) FADE X.Y ENTER
The given cues will be stored with a basic fade and outfade of X.Y seconds for all non-snap channels.

f) Switching to fade display mode:
FADE ENTER
All sheets wich are set to AUTO display mode, will display fades instead of values. This effect is only temporary. All sheets will switch back to value mode upon ending of the next command line operation.

FADER

Classification : object keyword

Format	**Meaning**
FADER X [THRU [Y]]	Fader X to Y of current page
FADER P.X [THRU [Q.Y]]	Fader X of page P to fader Y of page Q
FADER X [THRU [Y]] PAGE P [THRU [Q]]	Fader X to Y of page P to Q

- Fader number X/Y must be in the range of [1 .. 20]
- Page numbers P/Q must be in the range of [1 .. 64].

Only one command is implemented for the fader keyword:
FADER (list of faders) AT (value list) [ENTER]
This command will set the motorized faders to the given values.

FADERBUTTON1

Classification : object keyword
The same as EXEC, but in case of ASSIGNMENTS it is explicitely pointing to the MIDDLE button.

FADERBUTTON2

Classification : object keyword
The same as EXEC, but in case of ASSIGNMENTS it is explicitely pointing to the LOWER button.

FADERBUTTON3

Classification : object keyword
The same as EXEC, but in case of ASSIGNMENTS it is excplicitely pointing to the UPPER button.

FIX

Classification : executing keyword

a) **As starting keyword**, it is used to fix / unfix EXECUTORS. A fixed executor is physically present on all pages.
FIX (executor list) [ENTER]

b) In an assign command, *this function can be put on an executor button (see ASSIGN).*

FIXTURE

Classification : object keyword

a) as starting keyword:
FIXTURE ENTER
FIXTURE becomes the DEFAULT KEYWORD.
FIXTURE (range list) ENTER
Select fixtures in range list.
FIXTURE (range list) AT ... (see AT)
Apply values to fixtures in range list.
Fixture numbers in the range list must be in the interval [1 ... 9999].

b) as target for the following executing commands:

ON	activate all feature values in programmer.
OFF	deactivate all feature values in programmer and deselect fixture.
PAUSE	PARK all features of fixture.
GO	UNPARK all features of fixture.

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FLASH_DOWN

Classification : executing keyword

a) As starting keyword, every executor that follows after FLASH_DOWN reduces its intensity channels to zero with no time.

FLASH_DOWN (executor list) [ENTER]

b) As starting keyword combined with **UNPRESS**, every executor that follows returns its intensity channels to their previous levels.

FLASH_DOWN (executor list) UNPRESS [ENTER]

a) In an assign command, this function can **NOT** be used. You have to use the Assign menu for putting it on an executor button. It is simply called **FLASH** there.

Note: It is almost impossible to use this command by typing it into the command line. Rather use it when it is assigned to a button or as part of a macro!

FLASH_DOWN_OFF

Classification : executing keyword

Same as FLASH_DOWN ... UNPRESS.

Please look at the FLASH_DOWN command description.

FLASH_UP

Classification : executing keyword

a) As starting keyword, every executor that follows after FLASH_UP outputs all intensity channels of the current cue to 100% of their programmed value.

FLASH_UP (executor list) [ENTER]

b) As starting keyword combined with **UNPRESS**, every executor that follows after FLASH_UP returns all intensity channels of the current cue back to their previous state.

FLASH_UP (executor list) UNPRESS [ENTER]

c) In an assign command, this function can **NOT** be used. You have to use the Assign menu for putting it on an executor button. It is simply called **OUT** there.

Note: It is almost impossible to use this command by typing it into the command line. Rather use it when it is assigned to a button or in a macro !

FLASH_UP_OFF

Classification : executing keyword

Same as FLASH_UP ... UNPRESS.

Please look at the FLASH_UP command description.

FORM

Classification : object keyword

a) as starting keyword it has no function.

FORM (range list) ENTER

Form numbers in the range list must be in the interval [1 ... 999].

b) as target for the following commands:

COPY	Copy one form to another
DELETE	Delete a form
EDIT	Open edit menu for form
INSERT/MOVE	Change visible number of form.

FULL

Classification : helping keyword

Full is an alias for 100% dimmer value (open).

a) As starting keyword, it is immediate, opening all dimmers of the current selection:

FULL

b) After the AT command in value ranges like:

... AT FULL ENTER

... AT 0 THRU FULL ENTER

FULL

2x FULL will transfer the Highlight value into the Programmer

GO

Classification : executing keyword

a) As starting keyword, every object that follows after the GO will try to **go forward** one step.

GO (target object list) [FADE X] [DELAY Y] [ENTER]

If fade or delay are given, they overwrite the pre-programmed times.

Target type	Operation
EXEC	Go forward one step
EFFECT	Start running forward
TIMECODE	Start playing forward
PAGE	GO on all its executors.
SPEEDMASTER	GO on all chasers using this speed master (executor assigned to a speed master)
SUBMASTER	Unpark all channels involved in this group.
CHANNEL, FIXTURE, GROUP	Unpark devices.
PRESET X (Preset Type)	Unpark all channels of current selection of that preset type.

b) In an assign command, this function can be put on an executor button (see ASSIGN).

GO-

Classification : executing keyword
a) As starting keyword, every object that follows after the GO will try to **go backwards** one step.
GO- (target object list) [FADE X] [DELAY Y] [ENTER]
If fade or delay are given, they overwrite the default GO- times.
The default GO- times can be changed in the SETUP / DEFAULTS menu.

Target type	Operation
EXEC	Go backwards one step
EFFECT	Start running backwards
PAGE	GO- on all its executors.
SPEEDMASTER	GO- on all programs using this speed master

(executor assigned to a speed master)
b) In an assign command, this function can be put on an executor button (see ASSIGN).

GOTO

Classification : executing keyword
a) As starting keyword, every executor that follows after the GOTO will try to **go directly to a given step.**
GOTO [CUE] [W] [EXEC X] [FADE Y] [DELAY Z] [ENTER]
Using the keyword CUE is optional.
If W (cue number) is not given, you will be prompted for it.
If executor is not given, default executor will be used.
If fade or delay are given, they overwrite the default GOTO times.
The default GOTO times can be changed in the SETUP / DEFAULTS menu.
b) In an assign command, this function can be put directly on to an executor button (see ASSIGN).
In actual fact you will end up with an LOAD assigned to the executor button as it has to ask for the cue number.

GROUP

Classification : object keyword
a) as starting keyword:
GROUP ENTER
GROUP becomes the DEFAULT KEYWORD.
GROUP (range list) ENTER
Select groups in range list.
GROUP (range list) AT ... (see AT)
Apply values to groups in range list.
Group numbers in the range list must be in the interval [1 ... 999].
b) as target for the following executing commands:

ON	activate devices contained in group.
OFF	deactivate and deselect devices contained in group.
PAUSE	PARK all devices of group.
GO	UNPARK all devices of group.

HIGHLIGHT

Pressing HIGHLIGHT once will change the selected fixtures to the value set in SETUP.
When holding the HIGHLIGHT button down, the selected fixtures will pulse – for a better identification.

IF

Classification : helping keyword
IF is performing a logical command within selections. It never enlarges the current selection. It leaves only those devices selected which are included in both selections:
Assuming that we have two groups (we will use real names to make it clearer):

PAR64	includes ALL PAR64 lamps
FRONT_TRUSS	includes ALL lamps on the front truss.

PAR64 IF FRONT_TRUSS ENTER will therefore select all PAR64 which are on the front truss !
General Syntax:
[(selection1)] IF (selection2) ENTER
If selection1 is not given, the current selection will be used.

IFOUTPUT

Classification : operational keyword
IFOUTPUT is selecting devices depending on the current stage output.
General syntax:
IFOUTPUT (object list) [ENTER]
If the object list is a hit on an executor´s button, or a click into an object pool window, ENTER is not needed.
Examples:
IFOUTPUT EXEC 1 ENTER All devices which have stage output from executor 1 will be selected.
IFOUTPUT PRESET 1.1 ENTER All devices which have the preset 1.1 active on stage will become selected. Very nice for selecting all fixtures that have a “blue star” currently on stage.

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IFOUTPUT (selection) ENTER All devices of the given selection that have a stage output at the moment become selected.
IFOUTPUT CUE/SEQUENCE/EFFECT works accordingly.
IFOUTPUT ENTER All devices having a dimmer value of more than 0 will be selected

IFOUTPUT (X) THRU (Y) ENTER All devices having an output between the entered values will be selected. If no value had been entered for X, the value 0 will be taken.

If no value had been entered for X, the value FULL will be taken.

If only one value had been entered, this value will be selected.

Basically, only % values will be looked for – entries above 100 will yield no result.

INSERT

Classification : operational keyword
INSERT (source objects) AT (destination) [ENTER]
Example: INSERT GROUP 10 THRU 15 + 20 AT 1 ENTER
Insert is working ONLY with SORTABLE objects. Sortable objects are:
PRESET, GROUP,MACRO,VIEW,EFFECT,FORM,TIMECODE,SEQUENCE
Insert will try to make sufficient free space at the given destination by moving non-empty objects.

INVERT

Classification : operational keyword
INVERT (selection) [ENTER]
INVERT is inverting the selected status of devices.
Example1:
Fixtures 1 through 5 are already selected.
INVERT FIXTURE 1 THRU 10 ENTER
Fixtures 6 through 10 are selected.
Example2:
All even fixtures of GROUP X are already selected.
INVERT GROUP X ENTER
All odd fixtures of GROUP X are selected.
Special case:
INVERT ENTER
The selected status of all devices that have ACTIVE channels in the programmer is inverted.

LABEL

Classification : operational keyword
LABEL (object list) ["NEW NAME"] ENTER
All objects in the object list will be renamed to "NEW NAME".
Directly entering the new name is only possible with the PC keyboard.
If the name is not given directly within the command, you will be prompted for it.
If more than one object is to be labeled, the given name will be enumerated for every object:
LABEL PRESET 4.1 THRU "COLOUR1" ENTER
Preset 4.1 is named "COLOUR1"
Preset 4.2 is named "COLOUR2" and so on.
Please note that executors do not have a name of their own. Instead they show the name of the object assigned to it. In this way, labeling of an executor does not change the name of the executor, but of its object. Relabeling of executors can be very quicky done:
LABEL hit executor, enter new name.
Of course you can not change the name of an empty executor.

LEARN

Classification : executing keyword
a) As starting keyword, every executor that follows after LEARN will use repeated learn comands to define a new speed.
LEARN (executor list) ENTER
b) In an assign command, this function can be put on an executor button (see ASSIGN).
The LEARN function works with CHASERS (a sequence assigned to an executor in chaser mode) and with EFFECTS (regardless if they are assigned to an executor or not).
Note: It makes no sense to use this function by typing it into the command line. The LEARN function will calculate and average the timing between 2 to 4 LEARN commands and adapt its speed to that.

LOAD

Classification : executing keyword

a) As starting keyword, every executor that follows after the LOAD will **go to a given cue upon the next MANUAL GO command.**
LOAD [CUE] [W] [EXEC X] [ENTER]
Giving the keyword CUE is optional.
If W (cue number) is not given, you will be prompted for it.
If executor is not given, default executor will be used.
b) In an assign command, this function can be put on an executor button (see ASSIGN).

MACRO

Classification : object keyword
a) as starting keyword, given macros will be executed.
MACRO (range list) ENTER
Macro numbers in the range list must be in the interval [1 ... 999].
b) as target for the following commands:

ASSIGN	A macro can be assigned to a VIEWBTN
COPY	Copy one macro to another
DELETE	Delete a macro
EDIT	Open edit menu for macro
INSERT/MOVE	Change visible number of macro

STOREStart to record a macro from live actions. Macro recording is indicated by a flashing macro key. Macro recording is stopped with the command STORE MACRO ENTER..
Macros can be timed.
A timed macro plays back with the same timing as it was recorded.
Non-timed macros execute completely at once.

MIDI_BTN

Classification : object keyword
A MIDI_BTN (midi button) is a remote function triggert by incoming midi note on/ note off signals.
The MIDI_BTN simulates an executor keypress, therefore it is working only in combination with an assigned executor. MIDI_BTNs can be seen under TOOLS / REMOTE MIDI menu.
Calling a MIDI_BTN manually:
MIDI_BTN X ENTER
Linking a MIDI_BTN to an executor:
STORE MIDI_BTN X EXEC/FADEREBUTTON1/2/3 Y.Z ENTER
Using EXEC in this command will always link the remote to the middle executor button.
X must be in the range from 1 to 72.

MOVE

Classification : operational keyword
MOVE (source objects) AT (destination objects) [ENTER]
Source objects : a range list of objects which are all of type X.
Destination objects: a range list of objects which are all of type Y
Object types X and Y must be equal or compatible (see COPY)
If object type is sortable, **MOVE object_a AT object_b** will exchange objects.
If object type in not sortable, object_b will be overwritten with object_a, then the original object_a will be deleted.
Sortable objects are:
PRESET, GROUP,MACRO,VIEW,EFFECT,FORM,TIMECODE,SEQUENCE
Nonsortable objects are:
EXEC,CUE,PAGE,VIEWBTN,DMXBTN,MIDIBTN,TOUCHBTN
The following objects can not be moved:
CHANNEL,FIXTURE,DMX,FEATURE,FADER

NEXT

Classification : immediate keyword
a) Create a subselection from the current selection:
If you have selected more than one fixture and then say **NEXT**, only the first fixture stays selected and the others become "temporarly deselected".
The next time you say **NEXT**, only the 2nd fixture within the current selection is "really selected" and so on. The
ALL command will clear this subselection.
b) Continue EDIT / UPDATE procedure with NEXT object:
See **EDIT**.
c) Cursor Right in open dialog windows.
In all temporary dialog windows and message boxes, you can use the **NEXT** key to move the input focus in that window to the right. Together with **PREVIOUS** and **ENTER** you can, for example, choose the appropriate answer in a message box.

NEXT

If no device is selected, NEXT will bring the fixture having the lowest ID into the selection; on the next NEXT, the fixture with the next ID in order will be selected. With PREVIOUS, the selecting direction will be reversed. Proceeding from the fixture with the highest ID, on the next NEXT, the selection will jump to the dimmer with the lowest ID.

ODD

Classification : immediate keyword
ODD is creating a sub-selection from the current selection.
If you have selected 10 fixtures and the say **ODD**, only the 1st , 3th,5th,7th and 9th fixture in this

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selection stays Selected. The others become “Temporarily deselected”, waiting to be fully selected again by the **ALL** command.

OFF

Classification : executing keyword

a) As starting keyword, every object that follows after the OFF will be switched OFF.

OFF (target object list) [FADE X] [DELAY Y] [ENTER]

If fade or delay are given, they overwrite the default OFF time.
The default OFF times can be changed in the SETUP / DEFAULTS menu.

Target type	Operation
EXEC	Switch off executor
EFFECT	Switch off effect (fading out)
TIMECODE	Stop timecode show
PAGE	Does OFF on all its executors.
SPEEDMASTER	Does OFF on all programs using this speed master (executor assigned to a speed master)
SUBMASTER	“Knock out” all channels involved in this group.
CHANNEL,FIXTURE and GROUP	“Knock out” all given devices.
PRESET X (Preset Type)	“Knock out” all channels of current selection of that preset type.

“Knock out” means to clear the programmer completely for a channel.

b) In an assign command, this function can be put on an executor button (see ASSIGN).

ON

Classification : executing keyword

a) As starting keyword, every object that follows after the ON will be switched ON without changing the current step.

ON (target object list) [FADE X] [DELAY Y] [ENTER]

If fade or delay are given, they overwrite the pre-programmed times.

Target type	Operation
EXEC	Switch on executor
EFFECT	Switch on effect (fading in in last direction)
PAGE	Does On on all its executors.
SPEEDMASTER	Does On on all chasers using this speed master (executor assigned to a speed master)
SUBMASTER	“Knock in” all channels involved in this group.
CHANNEL,FIXTURE and GROUP	“Knock in” all given devices.
PRESET X (Preset Type)	“Knock in” all channels of current selection of that preset type.

“Knock in” means to activate the programmer for a channel with its current value. This function can also be used to make “snapshots” of running programs.

b) In an assign command, this function can be put on an executor button (see ASSIGN).

OOPS

Classification: immediate keyword

OOPS, I made a mistake! Undo!

OOPS progressively performs:

- If the command line is not empty, a backspace in the command line.

- If the undo stack is not empty, an undo operation.

Undos are created for programming actions such as storing a cue.
You can not do an undo for playback actions such as starting an executor.
The undo stack contains the last 10 programming operations, therefore you can go back 10 undos. Nevertheless a command like DELETE SEQU 1 THRU 10 (deletes 10 sequences) will create only one undo on the stack.
Working with undos can give you security during your programming, but for performance reasons on very large shows it can be switched off (see SETUP / UNDO menu) .

PAGE

Classification : object keyword

a) As staring keyword, the given page will become the current page.

PAGE T.X ENTER

T Type of page in range [1..3]
Type 1 means Dimmer pages
Type 2 means Fader executor pages
Type 3 means Button executor pages

X For dimmer pages in range [1.. amount dimmers divided by 20]
For executor pages in range [1..64]

PAGE X ENTER Will select fader and button executor page together

b) As target for the following operational commands:

COPY Copy one page to another
DELETE Delete a page
MOVE Move a page to a different location

c) As target for all execution commands.

The page will redirect the given commands to all its executors.

PAUSE

Classification : executing keyword

a) As starting keyword, every object that follows after the PAUSE will be paused.

PAUSE (target object list) [ENTER]

Target type	Operation
EXEC	Pause an executor
EFFECT	Pause an effect
PAGE	Pauses all executors on the page.
SPEEDMASTER	Pauses all chasers using this speed master (executor assigned to a speed master)
SUBMASTER	"Park" all channels involved in this group.
CHANNEL,FIXTURE and GROUP	"Park" all given devices.
PRESET X (Preset Type)	"Park" all channels of current selection of that preset type.

"Park" means to freeze the output for a channel with its current value. Parked channels are shown with a bright blue background in the sheets. Although a channel is parked, it can still be used normally for programming purposes.

b) In an assign command, this function can be put on an executor button (see ASSIGN).

PRESET

Classification : object keyword

a) as starting keyword:

PRESET ENTER

PRESET becomes the DEFAULT KEYWORD.

PRESET T.X ENTER

Call Preset X of type T.

X Preset number in range [1...999]

T Preset type in range [1...9]

b) as target for the following operational commands:

COPY	Copy one preset to another
DELETE	Delete a preset
EDIT	Start edit / update procedure for preset
IF	Deselect devices which are not part of the preset.
IFOUTPUT	Search for stage output of preset
LABEL	Change name of preset
MOVE/INSERT	Move preset to another position

PREVIEW

Classification : operational keyword

PREVIEW (object) [ENTER]

Only one object can be previewed at one time.

Preview will show the content of the object in the fixture / channel sheets without outputing to stage (blind). Programmer contents is not destroyed but using Preview.

Preview will be indicated by all sheets, showing PREVIEW in their titles.

Preview is cancelled by the next command line operation.

PREVIOUS

Classification : immediate keyword

a) Create a subselection from the current selection:

If you have selected more than one fixture and then say PREVIOUS, only the last fixture of the selection actually stays selected. The others become "temporarily deselected". The next time you say PREVIOUS, only the 2nd last fixture within the current selection is actually selected and so on. The ALL command will clear this subselection.

b) Continue EDIT / UPDATE procedure with PREVIOUS object:

See EDIT.

c) Cursor Left in open dialog windows.

In all temporary dialog windows and message boxes, you can use the PREVIOUS key to move the input focus in that window to the left. Together with NEXT and ENTER you can , for example , choose the appropriate answer in a message box.

PREVIOUS

If no device is selected, PREVIOUS will bring the fixture having the lowest ID into the selection; on the next PREVIOUS, the fixture with the next lower ID will be selected. With NEXT, the selecting direction will be reversed. Proceeding from the fixture with the lowest ID, on the next PREVIOUS, the selection will jump to the dimmer with the highest ID.

SELECT

Classification : executing keyword

a) As starting keyword, it is used to select the DEFAULT EXECUTOR.

SELECT hit executor

SELECT EXEC X ENTER

The default executor can be identified by its green title in the executor mini displays. The default executor is reacting to the DEF_GO,DEF_GO- and DEF_PAUSE commands and to their physical counterpart, the three big yellow buttons.

During programming it can be very convenient to make the executor you are working on the default one. Many commands assume to work with the default executor if no other executor is given.

b) In an assign command, this function can be put on an executor button (see ASSIGN).

Pushing this button will select the executor of the button as default executor.

SEQU

Classification : object keyword

a) as starting keyword:

SEQU ENTER
SEQU becomes the DEFAULT KEYWORD.
SEQU (range list) ENTER
Select devices included in sequences.
Sequence numbers must be in the range of [1...999]
SEQU (range list) AT ... (see AT)
Apply values to devices included in sequences.

b) as target for the following operational commands:

EDIT	Opens edit menu for sequence
IF	Deselect devices which are not part of the sequence.
IFOUTPUT	Search for stage output of sequence
INVERT	Invert selection of sequence
LABEL	Change name of sequence
MOVE	Move sequence to another position

c) as target for the following executing commands:

ON	"Knock in" all devices contained in sequence.
OFF	"Knock out" all devices contained in sequence.
PAUSE	PARK all devices contained in sequence.
GO	UNPARK all devices contained in sequence.

STORE

Classification : operational keyword

STORE (object list) [ENTER]

All objects in the object list must be of the same type.
If no object is given, a new cue is stored into the default executor.
If the destination of the store command is not empty, you will be asked for confirmation.
In case of storing over existing cues, you will furthermore be asked about the desired store mode. e.g. merge, overwrite or remove.

If you start storing by pressing the STORE hard key, a temporary window will appear.

The settings in this window affect the way , the store command is handled.
Defaults for these store options can be found in SETUP / DEFAULTS menu.

SWOP

Classification : executing keyword

a) As starting keyword, every executor that follows after SWOP increases the intensity of all programmed dimmer channels to 100% while reducing all other executors to 0% (as long they are not protected against swop).

SWOP (executor list) [ENTER]

b) As starting keyword combined with **UNPRESS**, every executor that follows after SWOP reduces the intensity of all programmed dimmer channels to 0% while restoring the intensity of
all other executors to 100%

SWOP (executor list) UNPRESS [ENTER]

c) In an assign command, this function can **NOT** be used. You have to use the Assign menu to define it on an executor´s button.
Note: It is nearly impossible to use this command by typing it into the command line. Use it when it is assigned to a button or as part of a macro!

SWOP_OFF

Classification : executing keyword

Same as **SWOP ... UNPRESS.**
Please look at the **SWOP** command description.

TEMP

Classification : executing keyword

a) As starting keyword, every executor that follows after TEMP performs a GO if it wasn´t already running..
TEMP (executor list) [ENTER]

b) As starting keyword combined with **UNPRESS**, every executor that follows after TEMP is switched OFF.
TEMP (executor list) UNPRESS [ENTER]

c) In an assign command, this function can be assigned to an executor´s button.
ASSIGN TEMP (executor list) ENTER

Note: It is nearly impossible to use this command by typing it into the command line. Rather use it when it is assigned to a button or in a Macro! TEMP does not really exist as a function. It is always translated into a pair of GO/OFF commands. You will see that if you record TEMP in a timecode show.

THRU

Classification : helping keyword

THRU can only be used within other commands to create ranges.

X	**THRU Y**	Range from X to Y
X	**THRU**	Range from X to the end
	THRU Y	Range from the beginning to Y
	THRU	Range from the beginning up to the end.

The meaning of "beginning" and "end" depend on the context:
FIXTURE 10 THRU ENTER will select all fixtures from 10 upwards.
Thru can of course also be used to create ranges of values like
CHANNEL 1 THRU 10 AT 0 THRU FULL ENTER

or
CHANNEL 1 THRU 10 AT FULL FADE 1 DELAY 0 THRU 5 ENTER

TIMECODE

Classification : object keyword

a) as starting keyword:

TIMECODE ENTER
TIMECODE becomes the DEFAULT KEYWORD.
TIMECODE (range list) ENTER
Does nothing.
Timecode numbers in the range list must be in the interval [1 ... 200].

b) as target for the following operational keywords:

COPY	Copy one timecode show to another
DELETE	Delete a timecode show
EDIT	Open edit menu for timecode show
INSERT/MOVE	Change visible number of timecode show
LABEL	Change name of timecode show

c) as target for the following executing commands:

GO	Start playback
PAUSE	Pause playback, keep output
OFF	Switch off, release output
>>	Jump forward to next breakpoint in show
<<	Jump backwards to last breakpoint in show

Please look at chapter 7 for details about dealing with timecode.

TOGGLE

Classification : executing keyword

a) **As starting keyword**, every executor that follows after TOGGLE performs a GO if it wasn´t running or an OFF if it was running.
TOGGLE (executor list) [ENTER]
b) **In an assign command**, this function can be assigned to an executor´s button.
ASSIGN TOGGLE (executor list) ENTER

TOP

Classification : executing keyword

a) **As starting keyword**, every executor that follows after TOP is performing a GOTO FIRST STEP.
TOP (executor list) [ENTER]
b) **In an assign command**, this function can be assigned to an executor´s button.
ASSIGN TOP (executor list) ENTER

TOUCH_BTN

Classification : object keyword

A TOUCH_BTN (touch button) is a remote function triggert by incoming 0-10V signals.
The TOUCH_BTN simulates an executor keypress, therefore it is working only in combination with an assigned executor. TOUCH_BTNs can be seen under TOOLS / REMOTE TOUCH menu.
Calling a TOUCH_BTN manually:
TOUCH_BTN X ENTER
Linking a TOUCH_BTN to an executor:
STORE TOUCH_BTN X EXEC/FADEREBUTTON1/2/3 Y.Z ENTER
Using EXEC in this command will always link the remote to the middle executor button.
X must be in the range from 1 to 16.

UNPRESS

Classification : helping keyword

UNPRESS is used only in combination with functions of executor´s buttons that cause an action upon unpress. These functions are FLASH_UP,FLASH_DOWN,SWOP,and TEMP.
Please look at these commands for details about UNPRESS.

UPDATE

Classification : operational keyword

UPDATE does the following things, sorted by priority:
a) If the UPDATE dialog is open, it closes the UPDATE dialog.
b) If the EDIT / UPDATE procedure is active, the edited object is updated, and EDIT / UPDATE procedure is finished.
c) It loads the UPDATE dialog , where you can update changed PRESETS and CUES.

VALUE

Classification : immediate keyword

VALUE has no other meaning than switching back to value mode if desk is in a time mode such as FADE or DELAY.

VIEW

Classification : object keyword

a) as starting keyword, given views will be called.

VIEW (range list) ENTER
View numbers in the range list must be in the interval [1 ... 999].

b) as target for the following commands:

ASSIGN	A view can be assigned to a VIEWBTN

COPY	Copy one view to another
DELETE	Delete a view
INSERT/MOVE	Change visible number of view
STORE	Store a view. You will be asked for the screens that should be contained in the view.

Views can store and restore the window arrangement on the screens of your desk.

- A View can contain one screen or multiple screens.
- Views that contain single screens can be called back also on other screens.
- Views that contain multiple screens will be called back on the original screens.
- Views that contain single screens from external monitors can not be called back on the build in system screens (because of higher resolution).
- Views which are called by the command line (and not by the push of a VIEWBTN) are called back on the original screens.

VIEWBTN

Classification : object keyword

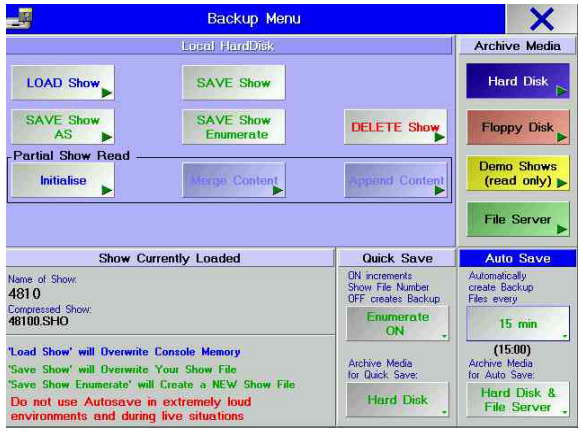
a) as starting keyword, given view buttons will be called.

VIEWBTN (range list) ENTER

Viewbutton numbers in the range list must be in the interval [1..30]
Each screen has 6 view buttons. 3 build in and 2 external monitors make a total of 30 view buttons.

b) as target for the following commands:

ASSIGN	Assign a view or a macro to a view button. Syntax is: ASSIGN VIEW X VIEWBTN Y ENTER ASSIGN MACRO X VIEWBTN Y ENTER
COPY	Copy one view button to another
DELETE	Delete (Empty) a view button.
MOVE	Move one view button to another
STORE	STORE a view and assign it to the view button.



11 Saving and loading a SHOW

A unnamed show will always saves as NEW SHOW; rename it immediatelley, for the next show will saved with this nameand will overwrite the previous show. ***Write protection is noct possible.***

Please make sure to frequently save the current show on harddisk during the programming procedure. A good idea is to change the name of your show on a regular basis so that you can go back to previous days programing. A back-up on floppy disk is always a good idea.

Automatic save:

With the AUTOSAVE key, you can set an automatic save according to the time displayed on the key. Avoid using this during a live Show or in very loud environments. When using the AUTOSAVE function a BACKUP of the Show will be made with each saving operation (max. 10). These backups can be used to restore previously saved Shows. You can display these backups using the SHOW BACKUP key..

- press ***BACKUP***
- press ***AUTOSAVE***, until the desired time is set. With OFF, you switch off Autosave.
- select your ***Archive Medium:*** hard disk (on the console), file server (external memory) to be set using ***FileServer*** in ***Archive Media***.

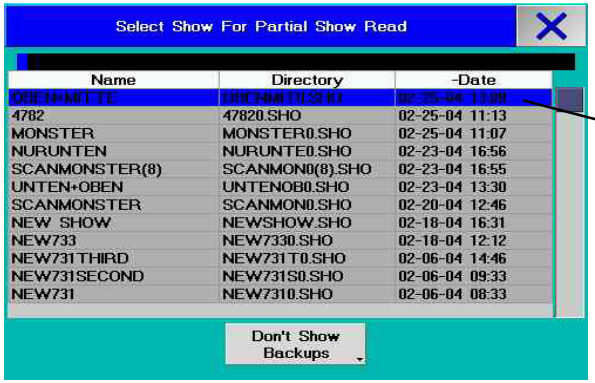
When Autosave is active, the time to the next saving point will be indicated on the bottom margin.

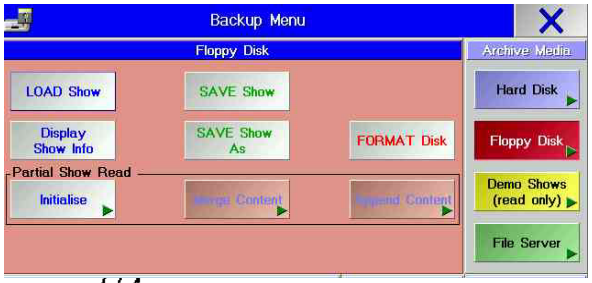
Quick save:

- press twice ***BACKUP*** - the fastest way to save the show
- select ***Enumerate***
- **set Enumerate** to ***OFF***; you can save the Show immediately.
- set ***Ennumerate*** to ***ON***; you can save the Show immediately, plus a consecutive number will be added to the current name.
- select your ***Archive Medium***: hard disk (on the console), file server (external memory) to be set using F***ile Server*** in ***Archive Media.***

11.1 Saving the Current Show on the internal harddisk

- press ***BACKUP***
- press ***HARD DISK***
- save ***Show***
- ***SAVE Show As***: Enter a name for the show and confirm with ENTER. The show will be saved under the new name.
- **SAVE Show:** the Show is saved immediately with the current name.
- **SAVE Show Enumerate;** the Show is saved immediately and a consecutive number will be added to the current name.





grand MA

11.2 Loading a Show from the internal harddisk

- press ***BACKUP***
- press ***HARD DISK***
- press ***LOAD Show.***
- Press on the desired SHOW in the list. This will load the Show. .

The PLEASE CONFIRM window with the following options will open:
- ***YES***: To save the current Show before loading the new one.
- ***NO***: To load the new Show without saving the current one.
- ***CANCEL***: To abort this process.

The show will be loaded.

11.3 Loading a empty Show

- ***press BACKUP***
- press ***HARD DISK***
- press **Load Show** .
- type the new name and confirm with Enter . The PLEASE CONFIRM window with the options will open:

- ***YES***: To save the current Show before loading the new one.
- ***NO***: To load the new Show without saving the current one.

A complete new and empty show will opwn.
Additionally, you can save an „empty“ Show to hard disk or floppy so that you can use it later when needed. This way, you can also transfer demo shows, standard settings, etc. to others..

11.4 Deleting the current show

The currently loaded Show cannot be deleted! In order to delete the currently loaded Show, you have to load another Show first.

11.5 Deleting a Show from the internal harddisk

- press ***BACKUP***
- press ***HARD DISK***
- press **DELETE Show**. In the list, click on the Show that is to be deleted; the Show will be deleted immediately.

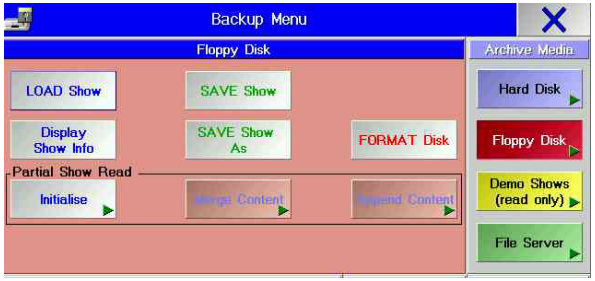
- If you press the **Stay** button, before deleting a Show, the Delete menu will not close automatically.

11.6 Saving the Current Show on floppy disk

All data necessary for the SHOW can be saved on to floppy disk (even all Fixtures to be used in the show and all users with all settings for this show). Thus, you can transfer the whole show to another ***grandMA*** console or for archive storage. The current Show will be saved including its name.

- press ***BACKUP***
- press ***Floppy DISK***

Format the floppy disk:



● ***press*** FORMAT! ***to make sure that the show will be saved safely.***

● ***Saving a show:***
- press ***Save Show***, confirm with ***OK*** or cancel the operation with ***Cancel***.
- press ***Save Show***, enter a new name for the show, and confirm with ***ENTER***.

● insert an empty IBM/PC formatted 3.5´´-floppy disk, remove the write protection (small opening on the floppy must be **closed**).

● confirm with ***OK***.

The SHOW will be saved, after the window has been closed. The whole operation can take some minutes. You can only save 1 show to a floppy.

● if needed, use ***YES*** to save the same show on a second floppy , or finish the operation with ***NO***.

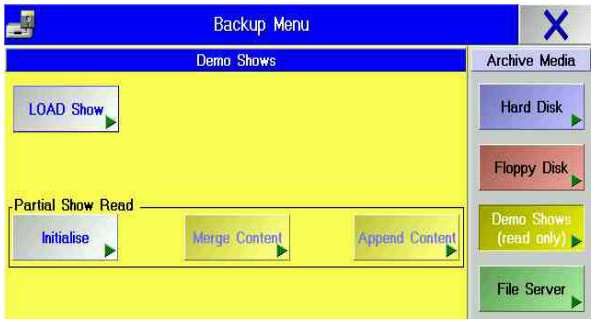
● in the end, remove floppy from the drive.

11.7 Loading a Show from Floppy disk

● press ***BACKUP***
● press ***Floppy DISK***
● press ***LOAD Show***.
● insert the floppy containing the Show.
● press ***OK*** (operation can take some minutes). The Show is being loaded.
● in the end, remove floppy from the drive, as otherwise the console will not boot on the next restart.

In order to avoid loading all users plus their respective profiles when loading a Show, you can choose one of the following options:
- accept all user profiles = EVERYTHING
- do not accept any user profile = NOTHING
- accept only the user who had created the Show = DISK CREATOR.

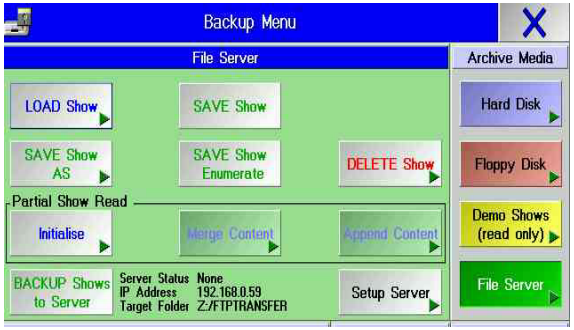
This way, you can relieve the memory space and the processor. In case the users on the floppy are identical with those already stored on the console, the request will be skipped.



Warning! You can only load shows that were created with versions 3.2 or later. If you have to convert shows created with an earlier version, please contact the hotline (see below).

11.8 Loading a Demo Show

● press ***BACKUP***
● press ***Demo Show***.
● press ***LOAD Show***.
● select the desired show using the Encoder, and load it by pressing on the Encoder.



11.9 Saving the Current Show to an external Hard Disk

In a network envionment, you can save shows to an external hard disk and load them from that location. In order to do so, you have to define the path to this hard disk from the BACKUP menu.

● press ***BACKUP***
● press ***File Server***
● ***setting up the File Server:***
- press ***SERVER SETUP***
- enter ***IP address, FOLDER*** path, ***USER***, ***LOGIN*** and ***Server Type***
● Press ***SAVE*** to save the settings.
● Saving a show:
- ***SAVE Show As***: Enter a name for the show and confirm with ***ENTER***. The show will be saved under the new name.

11.10 Loading a Show from an external Hard Disk

● press ***BACKUP***
● press ***File Server***
● press ***LOAD Show***.
● click on the desired Show in the list. The Show is being loaded.
The Please Confirm window will open and offer you:
- ***YES*** to save the current Show before loading the new one.
- ***NO*** to load the new Show without saving the current one.
- ***CANCEL*** will abort this process.
The Show is being loaded.

11.11 Deleting a Show from an external Hard Disk

● ***press BACKUP***
● press ***File Server***
● press **DELETE Show** button. In the list, click on the Show that is to be deleted; the Show will be deleted immediately.
- If you press the **Stay** button, before deleting a Show, the Delete menu will not close automatically.

11.10 PARTIAL SHOW READ (loading parts of a Show)

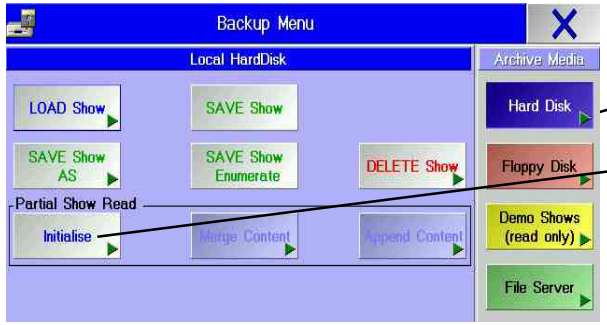
As of version 5.0, you can import parts of another show in to an existing show. Besides the Setup, you can also take over show elements like Groups, Presets, Sequences or individual Cues, Worlds, Forms, Effects, Layouts, Bitmap Effects, Macros and Matrices. Take care that all connected elements are being taken over, i.e. when a sequence refers e.g. to Presets, you have to import the Sequence plus the Presets.

The PARTIAL SHOW READ function is carried out in 2 phases:

SETUP transfer – here you have to decide, which fixtures of the imported show you want to transfer. If these fixtures do not correspond to the current fixtures, you can add them. If overlapping occurs, only the current or the imported fixture can be transferred. If both fixtures are to be used in the current show, the only way is to change the ID and Patch numbers of these fixtures in the respective show – it is not possible to do that in the PARTIAL SHOW READ function.

Data transfer – here, you can select elements of the imported show. Elements having the same name, will be overwritten or merged, depending on the command used.

TIP: Save the current show to a floppy in advance or make a backup.
Take care that the maximum number of channels that the console can handle will not be exceeded.



- ***press*** BACKUP
- choose the ***Medium*** - internal disk (***Hard Disk***), external memory (***FILE SERVER***) or removable disk (***FLOPPY DISK***).
- press ***INITIALIZE*** - the ***SELECT SHOW for PARTIAL SHOW READ*** will open
- select the show, you want to load elements from, and confirm by pressing on the Encoder

- Mind the limitations (number of parameters)

In the DEVICE MATCHING TABLE, the current Setup (green background) and the Setup of the imported Show (grey background) will now be displayed. Fixtures appearing in the same line, have the same ID number – here, the user has to decide whether to keep the current fixture or to take the imported fixture. It is possible that the settings of fixtures of the same type will change (position in the Stage view, defaults); Effects, Cues, etc. will, however, not be changed. And it can happen that for fixtures of different types, programs change, if e.g. some imported fixture's features, a Cue refers to, are missing.

- select ***VIEW***; you can select fixtures in all views.

- with ***ALL,*** all fixtures of the current Show (on the left) and of the imported Show (on the right) are displayed.

- with ***MATCH***, all overlapping channels are displayed; you must choose, which fixtures to overwrite in the current Setup. Overwriting objects, even partially, in the current Setup, can affect the whole show – after starting the operation with 2x OK, the modification cannot be undone any more. If you do select none, the fixtures of the current Show are kept (the fixtures in the left half of the menu keep their green background).

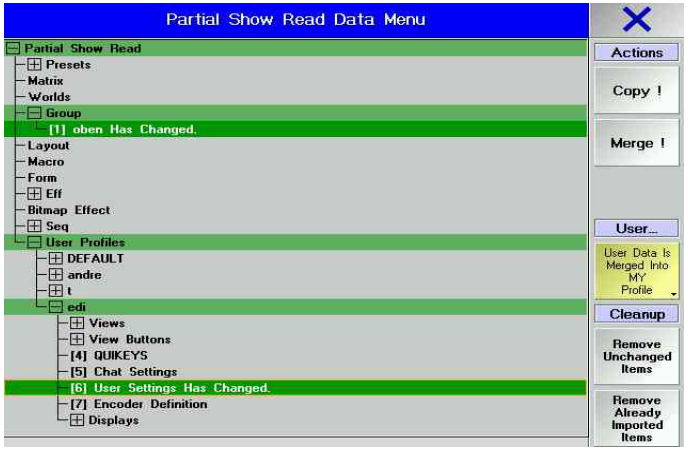
- with ***NO MATCH***, you find all fixtures that do not overlap, i.e. that can be taken over without having been selected.

The lmaps on the left side (current setup) also can be selected, they will be deleted from current setup.
- ***NEW*** here lamps are displayed, you are importing from loaded show into the current show (color has changed from grey to green)
- ***IGNORED*** here lamps are displayed, you will not import into the current setup (lamps in the right part, color stays grey) or lamps, which are deleted from the current show (lamps in the left part, color has changed from green to grey)

● ***select the fixtures*** and press on the Encoder next to the screen – the colors of the selected fixtures will change.

or

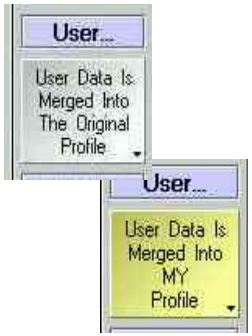
Select in the ***WIZARD:***
- ***NO NEW DEVICES – DEFAULT***; will always be executed, if no other change was entered. Here, you cannot change the setup of the current show.
- ***ADD UNMATCHED DEVICES – Harmless***; here, only those parts of the imported show will be transferred that do not overlap with the current setup – i.e. the current setup will not be changed, but only extended. No risk of ruining the current show.
- ***USE OLD DEVICES – Dangerous***; here, the complete setup of the imported show will overwrite the setup of the current show. Only those parts that do not overlap will be kept.



● confirm with ***OK, NEXT***.
● confirm ***PLEASE CONFIRM*** with ***OK***.
● confirm ***WARNING***

After opening the files, the BACKUP menu will open again

● press ***MERGE CONTENTS***
● select the desired show elements – will receive a dark green background.
- move the blinking frame using the Encoder. Using the Encoder, open or close the sub-folders (marked with a + or – sign), or select individual elements.
- the text note ***„has changed. It is older***" in red: This element is older than that having the same name in the current show. (the creation date of this element is added in brackets)
- the text note „***has changed. It is newer***" in green: This element is newer than that having the same name in the current show. (the creation date of this element is added in brackets)



● select a User Profile

- ***User Data is merged into my profile:*** The profile elements of the selected profile will be loaded into the profile of the current user.
- ***User Data is merged into the original profile:*** The profile elements of the selected profile will be loaded into the profile of the user having the same name, or (if the user does not exist in the current show) the user will be created.

If ***MY PROFILE*** (yellow button) is chosen, after multiple profiles were selected, the current user's profile will successively be overwritten by the selected profiles – not a good deal.

● Load parts of a Show

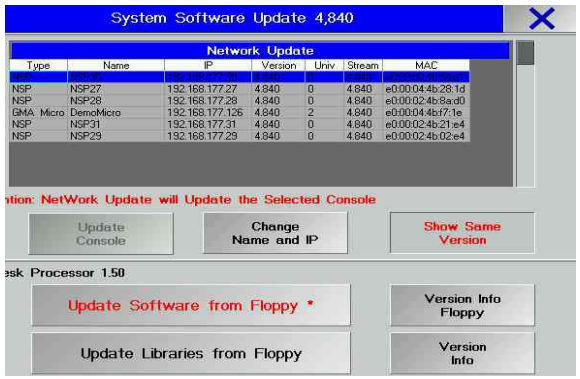
- ***COPY***;–the selected elements will be inserted into the current show, or, if there are elements having the same name, the current elements will be overwritten by the copied elements.
- ***MERGE***;–the selected elements will be inserted into the current show, if there are elements having the same name, the current elements will be merged with the copied elements.

Here a concise overview:

- ***Remove unchanged Items:*** Will delete all elements in the overview that were not changed, i.e. these elements will not exist in the current show.
- ***Remove already imported Items:*** Will delete all elements in the overview that were already imported using the COPY or MERGE command.

● leave the menu by pressing on the „***X***"

12 Update Software


System Software Update 4,840
Network Update
Type Name IP Version Univ Stream MAC
NSP NSP27 192.168.177.27 4.840 0 4.840 e0:00:04:4b:28:1d
NSP NSP28 192.168.177.28 4.840 0 4.840 e0:00:02:4b:8a:d0
GMA Micro DemoMicro 192.168.177.126 4.840 2 4.840 e0:00:04:4b:f7:1e
NSP NSP31 192.168.177.31 4.840 0 4.840 e0:00:02:4b:21:e4
NSP NSP29 192.168.177.29 4.840 0 4.840 e0:00:02:4b:02:e4
tion: NetWork Update will Update the Selected Console
Update Console
Change Name and IP
Show Same Version
sk Processor 1.50
Update Software from Floppy *
Version Info Floppy
Update Libraries from Floppy
Version Info

You can only download the update from our HOMEPAGE (www.malighting.de) using an IBM compatible PC. After the download execute the file. It is a self extracting archive. You will be asked to insert some empty floppy disks into drive A: , press OK and your update disks will be created.

Do not update the grandMA right before running a show! Updating the software is a serious thing. MA Lighting can not always guarantee that your old show will play back correctly after an update !

Update by floppy disk:

● press ***SETUP***

● ***UPDATE SOFTWARE*** If is should not be possible, to enter this menu (e.g. because a previous update had not been completed properly), you can open it using the F4 key on the keyboard.

● press ***Update Software from Floppy***

● when asked to, insert the floppy and confirm with ***OK.***

Before changing disks, make sure that the green LED on the floppy drive is off.

The update can last up to 10 minutes. After updating , it is possible to do a reset.
By pressing the soft key "VERSION INFO" you can read about new functionality and fixed bugs of the latest update. To renew the Fixtures Library, insert the optional available FIXTURE UPDATE floppy and press the "Update Fixture Library from Floppy" button. This may last a few minutes. After processing the note „Fixture Library Update done" appears. Additionally here is a possiblity to import older fixtures made with version 3.2/.3.3..
Update via network: (for that, the new software has to be loaded onto the console)
grandMA, grandMA-Light, grandMA Ultra-Light , grandMA MICRO, NSP, OFFLINE Editor and grandMA Replay-Unit, connected via a network, can be updated among themselves.
Proceed very carefully! This operation may be carried out by qualified grandMA users only. Futhermore, this operation requires an impeccable network not overloaded at this moment. ***IN NO CASE MAY THE CONSOLES HAVE THE SAME IP NUMBERS – THIS WOULD DESTROY THE OPERATING SYSTEM!***
Updating the software is only possible, if the first three number groups of the grandMAs' IP addresses are identical, e.g. 192.168.177.X).

- press ***SETUP***
- press ***UPDATE SOFTWARE***
- select a console from the table. If a console is not being displayed, it has a software version that cannot be updated via network; you have to do that individually using a floppy.
- press ***UPDATE CONSOLE*** (or cancel the operation with ***CANCEL***)

WARNING! As of version 5.0, the selected console will receive the software version of the very console, the update was started from; i.e. it is not possible, to „get" a software update.

- confirm the successful operation on ***PLEASE CONFIRM.***

After the successful update, the console should disappear from the overview. Repeat this operation for all consoles.
- Using ***CHANGE NAME and IP***, you can change the name and the IP address of a NSP directly on the console. The button will only be active, if a NSP exists in the overview.
- using ***SHOW SAME VERSION***, you can call up all consoles of the session already having the same software version.

Updating without floppy disks:
Using the ***OFFLINE – EDITOR***, you can very quickly update consoles in a network connected with one another and having internet access.

- on the internet site www.malighting.de, go to SUPPORT / SERVICE and download the ***grandMA OffLine Editor*** program to your PC.
- start the ***grandMA OffLine Editor*** on your PC
- in the ***grandMA OffLine Editor***, press the ***SETUP*** button
- with ***UPDATE CONSOLE***, update the consoles and NSPs (see above)

ATTENTION PLEASE! Deactivate Anti-Virus or Firewalls. Those can affect proper operation.

13 Utility Menu

You will need this menu, if the main program or the actual show is damaged due to a crash or some other error. For the ***grandMA*** light and ultra-light you ***MUST*** have an external keyboard.
In the Utility Menu, you can load or delete an old ***grandMA*** operating system. You can also delete shows here. You can delete the current show (this show is automatically loaded upon power-up of the console). You can renew the Firmware for the second built-in Computer (Motorola) and you can also renew the ***grandMA*** operating system via floppy disk.
During the Boot-up process you will see all loaded program segments (blue background) on the right TFT display. In order to access the Utility Menu you have to push any key as soon as the message :
??? TO ENTER UTILITY MENU PRESS ANY KEY ??? is displayed with red background during the boot-up process. The menu will open after approx. 10-20 seconds.

Press 1: Restore grandMA operating system
If you press the „1" key on the keyboard, you will see a list with all systems existing on the harddisk. By pressing one of the displayed keys (a, b, c...) the respective system will be installed. You have to confirm installation by pressing "o". **VERY IMPORTANT - this is the letter "o", not the number "0"** .As soon as the installation is completed, the display will show UPDATE DONE next to STATUS. You can start the console by pressing the "ESC" key twice.

Press 2: Delete grandMA operating system
Upon every update, a safety copy of the system will be automatically created on harddisk. In order to delete an older system from harddisk, press „2" on the keyboard. You will see a list with all systems existing on the harddisk. By pressing one of the displayed keys (a, b, c...) the respective system will be deleted. You have to confirm the delete process by pressing "o". **VERY IMPORTANT - this is the letter "o" not the number "0".** After deletion is completed, the display will show DELETE DONE next to STATUS. You can start the console by pressing the "ESC" key two times.

Press 3:Delete (old) grandMA shows,
Upon every update, a new folder for the shows will automatically be created to cleanup the harddrive on the harddisk. During every update, the console will save all old shows, converted to suite the new system software, in the youngest folder. From the time of the update, all new created shows will be automatically saved in this folder, too.
In order to delete shows from an older system version from the harddisk, press „3" on the keyboard. You will see a list with all shows in all system versions existing on this harddisk. By pressing one of the displayed keys (a, b, c...) the respective shows will be deleted. You have to confirm the delete process by pressing "o". **VERY IMPORTANT - this is the letter "o" not the number "0".** After deletion is completed, the display will show DELETE DONE next to STATUS. You can start the console by pressing the "ESC" key twice.

Press 4: Delete current show
If you press „4" on the keyboard, the current show (this show will be automatically loaded upon power-up of the console) will be deleted. You have to confirm the delete process by pressing "o". **VERY IMPORTANT - this is the letter "o" not the number "0".** After the deletion is completed, the display will show DELETE DONE next to STATUS. You can start the console by pressing the "ESC" key twice.

Press 5: Update firmware with display
If you press „5" on the keyboard, you can renew the Firmware for the second built-in Computer (Motorola). In order to update the software: insert the current update disk labeled „LAST DISK". You have to confirm the update process by pressing "o". **VERY IMPORTANT - this is the letter "o" not the number "0".** As soon as the update is completed, the display will show UPDATE DONE next to STATUS. You can start the console by pressing the "ESC" key twice.

Press 6: Update grandMA
In order to update the software: insert the current update disk labeled „LAST DISK". You have to confirm the update process by pressing "o". Shortly after, you will be asked for "DISK 1". Now insert this disk and confirm by pressing "o"**.VERY IMPORTANT - this is the letter "o" not the number "0".** The disk will be read (might take a little while). Following that, you will be asked for „DISK 2". Insert disk 2 and confirm again with "o". **VERY IMPORTANT - this is the letter "o" not the number "0"** (this will take a little longer now). As soon as the update process is completed, the display shows UPDATE DONE, PLEASE REBOOT next to STATUS. Now please reboot the console by using the combination CTRL-ALT-DEL or the RESET key on the rear of the console.

IMPORTANT: Avoid downdating the console to version 4.3.6X and then, or later, updating to version 5.xxx. This operation would destroy the operating system. If so, please contact the hotline.

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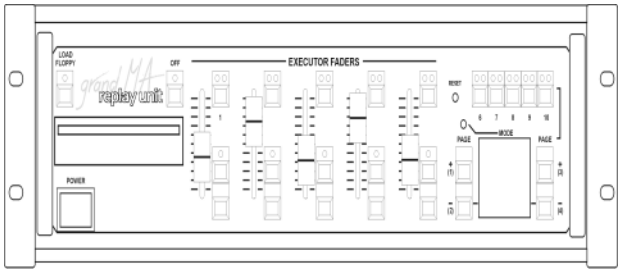


14 Layout and Controls *grandMA* replay unit

14.1 Introduction

The ***grandMA*** Replay Unit is a small rack mount controller unit that performs nearly all of the functions of the Award winning ***grandMA*** console. At 19" x 17" x 5", it requires a very little space, while offering 100% compatibility with the larger consoles.
The ***grandMA*** Replay Unit is designed to perform as a stand-alone show controller on exhibitions, in theme parks or other venues. In conjunction with one of the ***grandMA*** consoles, it also becomes a very powerful backup system capable of running an entire show in full tracking backup mode despite its reduced hardware.

Floppy Key

Quick and easy loading of a show from floppy disk. This key complies with the following steps on the ***grandMA***: "Backup-Load Floppy". If monitor and mouse are connected, you can follow the instructions in chapter **11.1** Saving or loading a SHOW. Without these, you would proceed as follows: Confirm, if you wish to save the actual show on the internal harddisk in advance by pressing the page keys / key no. 1 to 3.
Key no. 1: Save actual show on harddisk before loading show from floppy.
Key no. 2: Do not save on harddisk before loading show from floppy.
Key no. 3: Cancels the actual load task.
Without a floppy disk inserted, you will get an error message on the display. Confirm with key no. 1.
This procedure is also valid for many other "Pop Up menus" of the ***grandMA***.

Floppy Drive

The floppy drive will take all 3.5" 1.44MB HD disks and will serve to save shows or single fixtures from the library.

Off Key

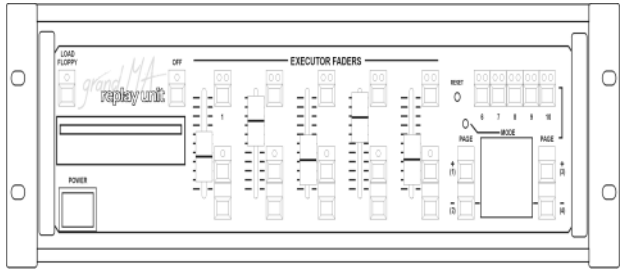
The "Off Key" has the same function as the "Off Key" on the ***grandMA***. Together with the Executor Buttons or the appearing menu on the monitor, you can switch off active executors. You can switch off the executor by simultaneously pressing the "Off Key" and the respective "Executor Button". ***5.6*** OFF menu

Executor Fader

There are 5 Executor Faders available. These five faders correspond to the faders no. 1 to 5 on the ***grandMA***. Faders no. 6 to 20 (Faders 6 to 10 on the ***grandMA*** light) are not available. This becomes especially important when programming the show on the ***grandMA*** and "running" the show afterwards with the Replay Unit. These faders are not motorized, so that the actual values have to be "grabbed" after switching pages. If the faders are not located at the actual value, the respective LEDs within the buttons will flash, until the value has been reached by moving the fader. Channel faders are not available.

Executor Fader Button

Three Executor Buttons are available for each Executor Fader (as on the ***grandMA***). These 15 Executor Fader Buttons correspond with the Fader Buttons no. 1 to 5 on the ***grandMA***. Fader Button no. 6 to 20 (Fader Button no. 6 to 10 on the ***grandMA*** light) are not available. This becomes particularly important when programming the show on the ***grandMA*** and "running" the show afterwards on the Replay Unit.



Mode Key

Has no function yet. This key is being reserved for possible special functions in the future.

Reset Key

This key stands for a “hard” reset. This key is only required in the unlikley event of the console freezing or crashing. The same key is located once again on the rear panel. **1.10.1 Basics**

Executor Buttons

There are 5 Executor Buttons (no. 6 to 10) available (as on the ***grandMA***). These buttons correspond with the Executor Buttons no. 21 to 25 on the ***grandMA***. Buttons no. 26 to 40 (no. 16 to 20 on the ***grandMA*** light) are not available. This becomes particularly important when programming the show on the ***grandMA*** and “running” the show afterwards on the Replay Unit.

Executor Fader Page Up / Key no. 1

This key has 2 functions.
Switching pages for the Executor Faders (Page up)
Confirm key no. 1 (the respective command appears as running text on the display)

Executor Fader Page Down / Key no. 2

This key has 2 functions.
Switching pages for the Executor Faders (Page down)
Confirm key no. 2 (the respective command appears as running text on the display)

Executor Key Page Up / Key no. 3

This key has 2 functions.
Switching pages for the Executor Keys (Page up)
Confirm key no. 3 (the respective command appears as running text on the display)

Executor Key Page Down / Key no. 4

This key has 2 functions.
Switching pages for the Executor Keys (Page down)
Confirm key no. 4 (the respective command appears as running text on the display)

Display

Pop-up messages will appear on the display of the TFT monitor, which have to be confirmed (as on the ***grandMA***).
NOTE: If these messages are not being respectively confirmed, you might not be able to continue in the process. If monitor and mouse are connected, you can also confirm the messages with these tools.

Power Supply

1.5.5 Battery

14.2 General Instructions

14.2.1 Differences between Replay Unit and the *grandMA* or *grandMA* light

The Software is identical for all of the units. However tow 1 external monitor can be connected. The UPS Functions as well as the 2048/4096 channels are also fully supported as on the ***grandMA*** or ***grandMA*** light.
Connectors for external keyboard, mouse and monitor are located on the rear of the unit (these are not included as standard).
Encoder, Trackerball, Wheel, more than 5 Executor Faders and 5 Executor Buttons as well as quite a few other keys on the ***grandMA*** and ***grandMA*** light are not available with this unit. Nevertheless most of the functions (except for the executors) can be reached and activated using the mouse and tow external monitor.

14.2.2 Working with Mouse, Keyboard and Monitor

With these tools almost all functions of the ***grandMA*** can be operated on this unit. The 3 keys of the mouse will take on the functions of the keys on the console. All required keys (such as CUE, COPY, NEXT, a.s.o.) have to be set up as "Quikeys" in advance (**9.2** Assigning and Activating QUIKEYS), so that they can be operated via the mouse. Values within the fixture or channel sheets can be modified with the middle mouse key. A Command Field will appear on the monitor when clicking on those fields above the (non-existing) encoders. You can operate this Command Field with the mouse also.

14.2.3 Working in Stand Alone Mode (Playback)

This means working with the Replay Unit without the use of external mouse, keyboard and monitor. In this mode you can only activate Playback via the existing elements on the front of the unit. Please note, that you will only have 5 Executor Faders and 5 Executor Buttons available. These Executors correspond with the first 5 Executors on the ***grandMA*** and ***grandMA*** light. There is no access to any of the other Executors. This becomes particularly important when programming the show on the ***grandMA*** but "running" the show afterwards on the Replay Unit.

14.3 Specification and Technical Data

14.3.1 Integrated Harddisk and Diskdrive

The harddisk does not only save a backup for the operating system, but leaves enough space for countless shows with hundreds of sequences. Shows can also be saved on disk for archive purposes or transfering to other ***grandMA*** consoles. The floppy disk drive also allows you to update the software, which can be downloaded from the MA Homepage (www.malighting.de) on the internet.

14.3.2 Ethernet and other Options

In addition to the 4 DMX output ports the hardware of the ***grandMA*** replay unit is designed to transmit larger numbers of channels via Ethernet. ESTA is currently working on a standard protocol for this form of transmission, which will guarantee a compatibility between units of different manufacturers, similar to the DMX norm. In addition to DMX input, Sound, SMPTE timecode, it offers a printer port and a RS232 interface (only for GPS-receiver) and a USP-Port (not active) for faster communication with any kinds of peripheral units.

14.3.3 System Maintenance and Software Updates

The software of the ***grandMA*** family is in a process of constant expansion and improvement. Due to the control via menus and display softkeys it is possible to realise the feedback of our customers and technical advances in our software updates. The hardware is only the basis and offers sufficient capacity to guarantee that its owner will always participate in the fascinating technical developments.

14.3.4 Peripherals

Peripheral units, such as a wireless remote control, are still in the development process. A 3D visualisation software is available.

14.3.5 Capacity:

– ***grandMA*** replay unit controls 2048 parameter, 4096 parameteras option via ethernet (dimmers and attributes of 8 or 16 bit) with softpatch to 4096 DMX addresses.Up to 16384 parameter with NSPs.
– A freely configurable monitor offers flexible operation and precise adaptation to any individual working mode.
– Playback works on the basis of dipless crossfade either in Tracking or Non-Tracking mode.
– The internal harddisk allows for virtually unlimited storage capacity of presets, memories, cues and effects.

14.3.6 Front Panel Layout

– 5 Faders as Executor-, Effect or Group-Faders, each with 3 directly assigned buttons.
– 5 Executor Buttons for direct retrieval of Sequences, Chases and other functions.

14.3.7 Setup Menu and Start Configuration

– Basic configuration available on harddisk.
– Fixture library with more than 280 multifunctional fixtures.
– All fixtures and channels can be named individually.
– Free Softpatch with MIN, MAX and INVERT of all four DMX lines.
– Definition of new fixture types on screen.

14.3.8 Display of output and data entry

– Numeric dimmer channel listing.
– Channel fader symbols.
– Fixture parameter spreadsheets for status report on moving lights and dimmers.
– Different additional options available.

14.3.9 Selection and Data Input

– Selection via Group Keys with Mouse.
- Hold and Move Mode with middle mouse key.
– Align option for proportional change of any group of values.
– Preset softkeys for the moving light features.
– Keys can be freely moved within the window.
– Presets grouped together for the 10 different function types.
– Keys of different preset groups with different colours.
– Free assignment of channels to be controlled in which preset.
- Direct access even during Playback.

14.3.10 Automatic effect generator

– A number of complex effects applicable to any channel.
– Library of all different movements.

14.3.11 Store Options

– Single cues, chase effects, sequences or effects.
– Selective programming for LTP and tracking mode.
– Basic fade times for fading channels and basic delay for switching parameters.
– Optional individual fade and delay for every single channel.
– Overwrite, Merge, Insert and Add-on option.
- Cue Lists in Tracking or Non-Tracking Mode.
– Optionally insert in Cue Only Mode.

14.3.12 Playback Options

– Free assignment between Program Pool and Playback faders or Playback buttons.
– Playback via fader or GO-button with stored timings.
– Chaser effects with Auto Run, Audio or manual X-Fade.
– Auto Loop / Single / Reverse / Bounce / Random.
– Sequence with individual timings per step.
– Go button mode / Auto Timed / Sound.
– Steps can include loops with counter or timer.

14.3.14 Executor Faders and Buttons

– Executor faders and buttons with multiple assignment options.
– Working mode of faders and buttons can be freely assigned.
- Optionally assignment of several executors for one single cue list.
– A block of special function buttons can be applied to any executor.

14.3.14 Fader working modes

– Brightness Master in HTP or LTP Mode.
– Manual X-Fade.
– Speed, Fade Time, Rate for chaser and sequences.

14.3.15 Button working modes

– ON/OFF, GO+, GO-, Pause, Flash up and Flash down.
– Fast GO and GO- (<<< and >>>) without fades.

14.3.16 Output Listings and Cuelist Protocols

– Infading or outfading values of main sequence is marked in different colours in the channel list.
– Lists of sequences including names of steps and times
- Parameter modifications directly in the spreadsheet.

14.3.17 Overwriting a program sequence

– Constant access to all effects and channels.
– CLEAR and RELEASE functions.
– UPDATE function for fast correction of programs.
– EDIT function for direct modification of playback parameters.

14.3.18 Adjustment of Hardware

– Software Equalizer for Audio Input.
– Preselection of certain settings (Defaults).
– Free grouping of functions for selective programming.
- Preselection of save mode, times and the standard operation of playback functions.

14.3.19 Connectivity

– 4 DMX 512/1990 Output Lines via 5-pin XLR Sockets.
– DMX Input with 5-pin XLR Socket and DMX Thru.

– Audio Input Line for Mono Audio Signals >20 mV with 6,3mm socket.
– SMPTE Timecode Entry for LTC Timecode >200 mV with 6,3mm socket.
– MIDI Interface with IN/OUT/THRU.
– External control input for direct voltage signals via 25-pin SUB D socket.
– 2 SVGA Output Lines for one colour monitor and a service monitor via 15-pin sockets.
– Parallel printer port Centronic via 25-pin SUB-D socket.
– Ethernet Interface for networking (Backup), DMX-transmission and Remote Control with RJ45-socket (10/100 Base-T) according IEEE 802.4.
– 2 serial interfaces RS-232C for future extensions (only for GPS-receiver) (9-pin SUB-D sockets).
- USB-Port (not active)
– Connections for external Keyboard (Mini-D, PS2-Type) and Mouse (Mini-D, PS2-Type).
– Power Supply via IEC/CEE 22 Inlet Mains Supply Plug (90 – 230V autoselecting)
.

14.3.20 Operating system

– Operating system for industrial applications named VXWORKS (no DOS, no WINDOWS).
– Fast cold boot time (approx.1minute).
– Software update via download from Internet.
– Off-Line Editor available.

14.3.21 Hardware

– Pentium Processor with min. 450 MHz Processor Speed and 256MByte RAM.
– 12 MByte non-volatile Flash Disk for Operating System, System Software and Installation Data.
– Built-in Hard Disk for Show Data, Library, etc..
– Integrated 3.5" Floppy Drive for easy software updating and external storage of Show Data.
– Reset Keys on front and rear housing.
– Built-in UPS (Un-interruptable Power Supply) to withstand main power failures up to 10 minutes.
– Professional protection against electromagnetic interference in compliance with all relevant European EMC regulations
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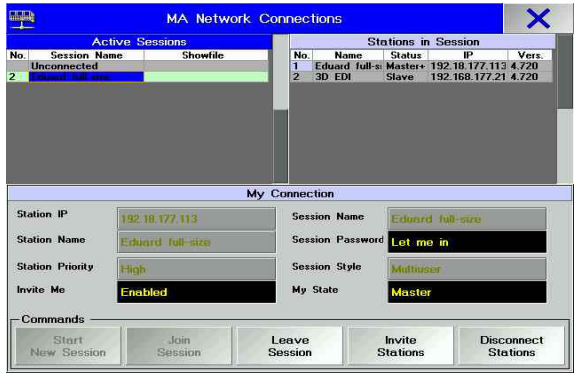
14.3.22 Weight and Dimensions

- Robust Steel Housing (485 x 430 x 140 mm).
- Weight: 24,25 lb. (11 kg



15 Potentialities of Network connections

In the ***grandMA*** family, there are multiple networking possibilities. In the following description, we will use the abbreviation ***grandMA*** or "unit" for any ***grandMA***, ***grandMA*** light, ***grandMA*** ultra-light, ***grandMA*** RPU, ***grandMA***-Offline, and ***grandMA*** 3D, as they are all equipped with the same software options and only differ in their hardware (Offline and 3D, however, cannot create any DMX). The PDA remote control is ***not*** a unit in the above sense, and will not be explained. The MICRO can only network with a 3D.

If in the network there is a device having a transmission rate of more than 10Mbit, the whole network will be reduced to that transmission rate.

grandMA plus ***grandMA 3D (PC):*** For visualization purposes on a PC
2 grandMAs connected: Backup system or Single user
grandMAs connected: Multi User system
grandMAs connected: Playback system, e.g.: as channel expansion
grandMA* 3D (PC)** with one or two ***NSPs as a complete console with DMX output
grandMA Micro with ***grandMA*** 3D (PC)

15.1 Preparing the network settings:

- pres ***TOOLS***
- Pressing the **MA Network Configuration** button in the TOOLS menu will open this menu.

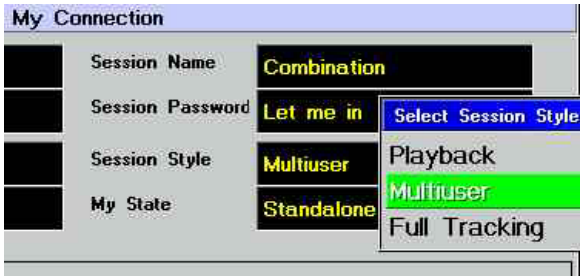
.

Save Show before changing the IP adress

- The change it, just click on the IP address; this will open a window containing the current IP address that can be changed directly. This IP address cannot be used on different consoles within the network. Simply alter the individual IP address of each unit to unique numbers within your network. Make sure that the first three number blocks (in this case: 192, 168, and 0) are identical for all units. By pressing the **Save and Reboot** button, the new address will be saved and the console be restarted..

- This is where the name of the console is displayed. This name will be displayed on each unit in the network and will facilitate the assignment of individual units in larger networks. To change, just click on the name, overwrite it in the window that will open, and confirm.
- define the station name
- define the station priority
- set Invite Me
- define the session name
- to set the Session Password (option): If another user wants to log into this **session**, he has to do so using this password.

- to set the Session Style:



- Playback: Preset for a Playback connection (only Playback data will be transferred, the databases of the devices are **different**).

If the 3D - Visualizer is to be connected to this console, you have to activate FULL TRACKING or MULTIUSER.

- ***Full Tracking***: Preset for Backup System or Single User. will automatically switch to schaltet sich automatisch um auf Multi User, if a session with multiple consoles is opened

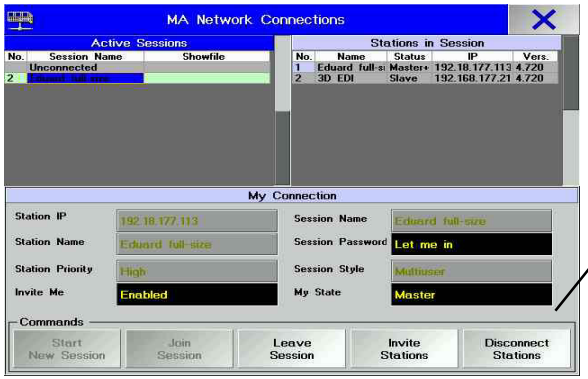
- Multi User: Preset for Multi User systems.

NOTE: In Multi User mode, you should use special network switches, e.g. PROCURVE SWITCH 2524 (managable switch). Our hotline will gladly advise you on setting up your network accordingly.
● My State - display: MASTER SLAVE

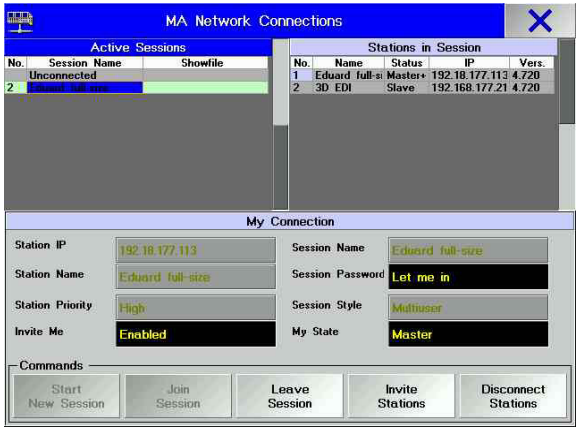
15.2 Preparing a Session (also neeeded to run NSPs)

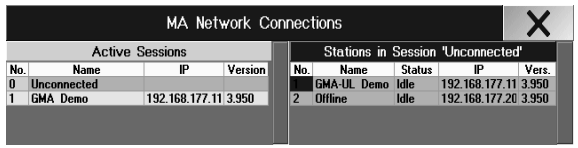
The left table will show all **sessions** stating its names and the "Unconnected" group (all not connected consoles). If a session is displayed with a red background, you can only log into this session using a password (join) above item 3: Forced Login. When clicking on a session (blue background), the units of this selected session will be displayed in the right table.

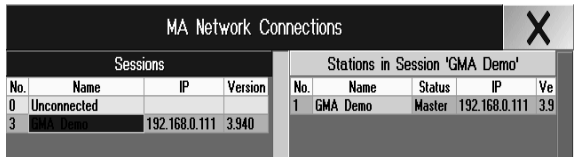
The right table will only show the units of the selected session (also ***grandMA***-Offline and ***grandMA*** 3D).
If a unit is displayed with a red background, it is not enabled for network connections. above, item: Allow Invitations.
The Master priority will only interest you, when you want to create sessions with more than 3 units. By clicking into the cell (here Normal), you can switch between Low, Normal or High. The unit with the highest priority will always have the Master function in a session, no matter, regardless of which device the session was started

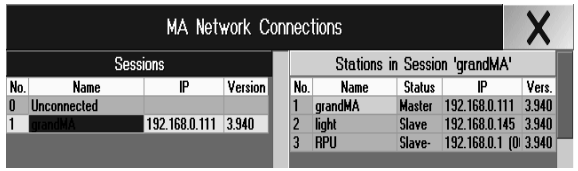


This is where the current status will be displayed: Master, Slave or Idle.




MA Network Connections
Active Sessions
No. Name IP Version
0 Unconnected
1 GMA Demo 192.168.177.11 3.950
Stations in Session 'Unconnected'
No. Name Status IP Vers.
1 GMA-UL Demo Idle 192.168.177.11 3.950
2 Offline Idle 192.168.177.20 3.950





15.3 Creating a Session

- Before you start a Session, make sure that the appriate settings from chapter 14.2 have been made.
- Connections always have to be made when starting a Session.
- Only now canthe different units (3D, Offline, grandMAs,...) be integrated in this Session

After all settings are made, press the **Start New Session** button and confirm with **OK**. The name of the unit will automatically be accepted as Session name.

or:

If you want to assign a name to the Session, click into the empty cell on the side of "Session Name", enter a name and confirm. Then press the **Start New Session** button and confirm with **OK**.

In the left table, the created Session will be displayed with its name and on a light green background. This unit will now be the ***only*** Master in this Session. Now, you **must** integrate **another** unit into this Session.

15.3.1 Expanding the Session

Before units can cooperate with each other, you have to integrate the second one (or further units, theoretically up to 10 units) into this Session.

- The Show of the second unit (and of all others) must be saved before, as these
- even on the 3D - will always be overwritten by the first unit (that had created the Session).
- All users that are not present on the first unit (that had created the Session) will be deleted. If needed, you would have to set them up again.
- Master priorities have to be defined (see on the right side)

Attaching Units from the Master

In the left table, click on „Unconnected". The table on the right will show all units that are the „free".
In the right table, click on the unit (3D, Offline, ***grandMA***, ..) (will get a blue background).
Press the **Invite Stations** button and confirm with **OK**. The data of the „invited" unit will be overwritten!

Attaching from another Unit

In the left table, click on the Session, which is to be joined.
Press the **Join Session** button and confirm with **OK**. The own Show data will be overwritten now!

Master Priorities

All units of the same priority: The unit that had created the Session, remains the Master. If the Masters fails, the Slave (2nd unit) will automatically become the Master. When there are more than 2 consoles, coincidence will decide, so you should assign priorities.
If there are more the 2 unit: e.g.: 1st unit ***grandMA*** (priority "Normal"), 2nd unit ***grandMA*** light (priority "Normal"), 3rd unit ***grandMA*** RPU (priority "Low"). When the Master fails, the 2nd unit (***grandMA*** light) will automatically become the Master, die RPU will remain Slave.
In the left table, click on "Session".
The right table will now show all units of the Session. Under „Status", the current priority will be displayed. In this case, for the **Light** only „Slave" will be displayed, the same priority as for the **Master**. For the **RPU**, "Slave will

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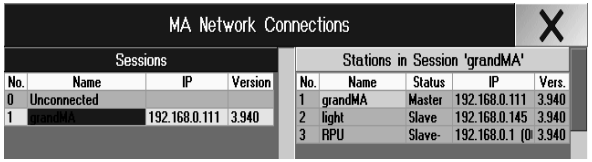
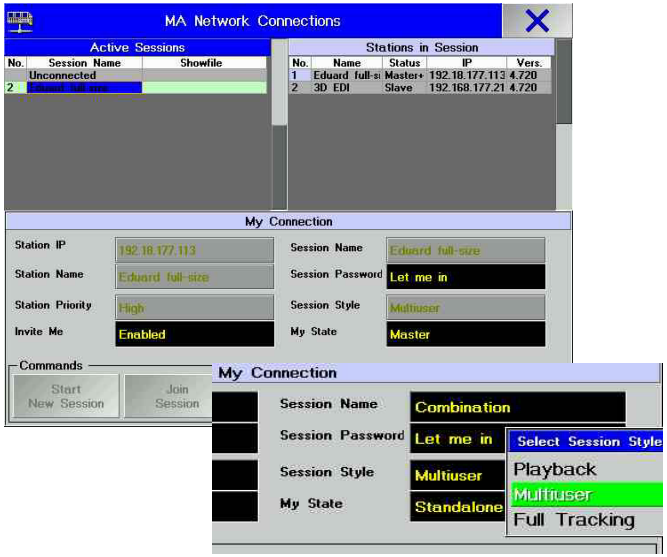




be displayed, i.e, the set priority of the **RPU** is „low“, i.e. lower as that of the **Master**.
As soon as the connection is established, the normal operation of the units can start.
Differences between **Full Tracking, Multi User** and **Playback** next page.

The Session will be kept, if not:

- interrupted manually by pulling the EtherNet cable (or deactivating the EtherNet converter)
- terminated automatically due to of a detected communication problem
- terminated due to a hardware problem either on the Master or on the Slave

14.3.2 Resolving or leaving a Session

When resolving a Session, the Session will be kept for all units. Even if a unit leaves the Session, the Show will be kept for the unit.

Master unit

You can resolve the complete Session by pressing the **Leave Session** button on the Master.
You can also exclude a unit from a Session; to do so, click on this unit in the right table (blue background). By pressing the **Disconnect Station** button, it will be excluded.

Slave unit

When pressing the **Leave Session** button, this unit will leave the Session.
You can also exclude a unit from a Session; to do so, click on this unit in the right table (blue background). By pressing the **Disconnect Station** button, it will be excluded.

15.4 Full Tracking

When a Session is in Full Tracking, all data relevant for the Show plus the operations will be executed simultaneously on all units, except when currently working with Worlds next page

15.5 Multi User

No Pages on other units will be switched over, **no** Selections of Fixtures transferred, and **no** View switchings transferred. Using Worls will have a major effect in this case next pages.

15.6 Playback

When creating a Playback connection, the Shows will be kept on **all** consoles (**!**). The Remote Controlling of Executors has to be, if you want that, switched on or off by using the Exe Sync button in the World pool. See **Worlds** next page.

As 'backup', we recommend getting advice from the MA hotline (see below) or your local distributor when building complex networks

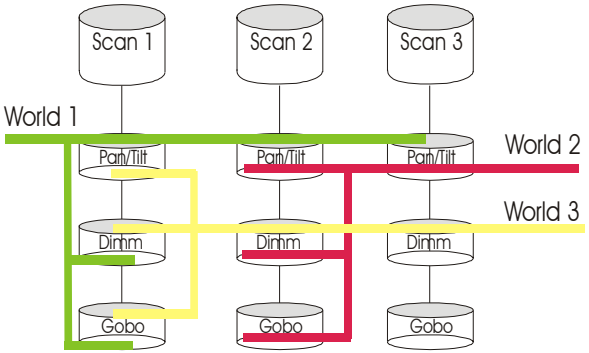
Abort or Reconnection of a session (Autoconnect)

If a session was disconnected (for example OFF without leaving the session), slave desk tries to reconnect to the session after switching on.
Abort Autoconnection:

- press ***Abort***: Connection will not re-established; desk works as stand-alone with the current show

Allow Autoconnection:

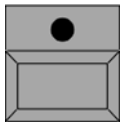
- press ***X*** or after approx.. 4 Seconds automatically: Connection with session (see picture: session GMedi of desk with IP 192.168.177.113) will be re-established (only when session master is available)



15.7 Worlds

In the World pool, you can create, call up or manage so-called “Worlds“.
Worlds can be created individually. Worlds can be used e.g. to split up complete Scanners (all Attributes) or individual Attributes of Scanners or just Dimmer channels or all Scanners and Dimmers for programming purposes - and, what is even more important, to run Executors.

STORE



Creating Worlds

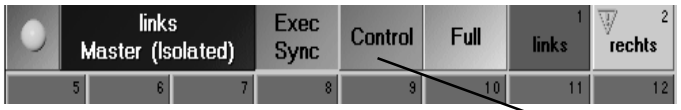
e.g.: In a World, the Scanners 1-10 are saved with the Dimmer and Color function. If you call up this World, only these Scanners will be displayed in the Fixture Sheet. Furthermore, only the Dimmer and Color functions can be modified. In the Channel or Fader Sheet, the Dimmer channels will no longer be displayed.

- Selecte Scanner or Dimmer channels.
- If you just want to store some Scanner attributes, you can activate these by double-clicking on them (these Attributes will be displayed in red for the selected Scanners).

Press the STORE key shortly.

- By clicking a button in the World pool, the World will be stored and operational. You can also give it a name directly by using the keyboard.

TIPP If **not all** Attributes are stored in a World, this will be indicated by a small red triangle in the left upper corner of the appropriate button.



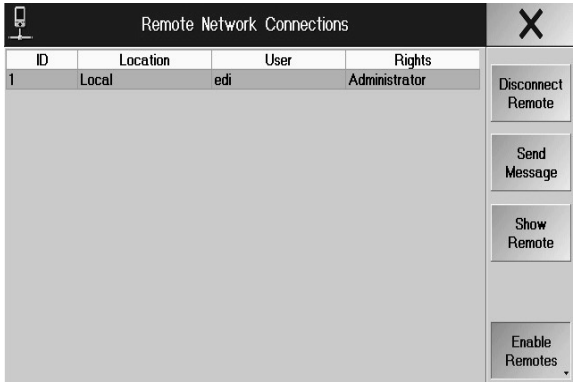
Working with Worlds

For the **programming** (creating the Show), Worlds are a great deal of help when it comes to creating Cues. If you select a World, only the assigned Scanner and Dimmer channels will be displayed, ready to be modified and stored.
NOTE: Starting a console will always reload the last setting; if a World was active when the console was shut down last time, only this World will be displayed on the next start. In the stage window, only fixtures of this World can be seen – in the stage window, however, under SETUP, all registered fixtures can be found.

If you are in a network session that means that different users (units) can use different or overlapping Worlds.
Call up a **World** by clicking on it (will be displayed in dark green).
CONTROL shows, if you have full control over the selected World (green) or just a partial Playback control (yellow)

Full World. By pressing the Full button, **all** existing Scanner and Dimmer channels will be displayed again (complete World). The button will be displayed in green.
If you see a warning symbol on a button, it means that this World is presently being used by another User (user).
With the **Exec Sync** function, multiple users (units) can start calling Executors simultaneously (synchronously). In order to do so, this function must be switched on on **both** appropriate units by pressing this button (will be displayed in green).

This special function only serves synchronizing two different Worlds (Playback). And this function has to be switched on in a Playback session, if the Playback commands are to be transferred.



15.8 Remote Network Monitor* (not for MICRO)

In the menu ***Tools***/***Remote Network*** all remotes, e.g. PDA's are displayed.
Button ***Disconnect Remote*** disconnect the selected remotes.
With ***Show Remote*** the selected remote is displayed on th eright touchscreen.
With ***Send Message*** you can chat with the selected remotes.
With***ENABLE / DISABLE REMOTES*** you can reject or enable a remote connection to your desk. Pressing ***Disable Remote***s does not interrupt the actual connection with a remote - press ***Disconnect Remote*** first.

16 Full Tracking Backup on *grandMA* consoles

16.1 Why using a backup system?

Anytime the ***grandMA*** or another member of the ***grandMA*** family is running a show it already provides a maximum level of stability in operation based on its unique hardware concept and the built-in UPS power supply. For applications like big theatre shows, live broadcasting or larger touring events even more security is sometimes required.

With other systems this is very often achieved by a second console loaded with the same show. This second desk ("backup system") is then manually tracked to take over control whenever the main system fails. Sometimes both consoles may be linked together via MIDI, MIDI Show Control or any other serial signal to perform a "playback tracking" which keeps both systems on the same cue. In a backup situation only the DMX-outlets need to be cross-switched.

The ***grandMA*** now offers a complete concept of show backup for moving light and conventional controllers.

16.2 *grandMA* with show backup

As the DMX signal distribution via EtherNet has been implemented to all ***grandMA*** systems the software release brings full backup capability via EtherNet.

16.2.1 Backup options via EtherNet

The Backup system can by used to combine multiple ***grandMA*** consoles (up to 10) to form a Master-Slave configuration. The console having the Slave function will permanently be provided with the current Show data, and furthermore, all Playback commands can be executed, so that it could take over the Show at any time, if the Master console fails or the connection is interrupted manually. Both the connected consoles will **always** run the **same** Show.

16.2.2 Tracking the Console Status

As soon as the ***grandMA*** Full-Tracking Backup has been set up and is operational, all important operating elements of the Master are simultaneously transmitted to the Slave system for parallel execution. If not set up this way, the Slave system will only follow the commands of the Master (main system), if the latter is operational. If the connection to the Master system is interrupted, or the Master itself crashes due to a hardware or software failure, the Slave system would not accept this invalid condition.

All these features as a whole let the ***grandMA*** provide a complete "Full Backup" without any compromise, offering maximum safety in any Show.

16.2.3 Using the True-Tracking Backup live

The ***grandMA*** Full-Tracking Backup system has been developed mainly, to ensure and cover any kind of live situation and critical Show conditions. Show recordings and final rehearsals will, however, be even better protected, by saving Show data at regular intervals, in between (by activating the „Autosave" or double clicking on the BACKUP button). One major advantage of a synchronisation via EtherNet is the possible combination with the DMX-EtherNet distribution (in this, the currently installed ArtNet, and PathPort protocols will be used). In order not to have to switch the DMX signals from the Master system to the Backup system in case of an emergency, the ***grandMA*** Master and the Slave console can be connected in a network via an Ethernet-DMX converter.

As long as the Master-Slave connection remains established in the network, the ***grandMA*** Master will actively transmit DMX data via the protocol; the Slave system will ignore the DMX-Ethernet settings. As soon as the Slave system is switched over into Master mode, it will immediately activate ArtNet protocol and start transmitting DMX data. All internal DMX interfaces will be active at any time.

Master Konsole	Executor Fader	Executor Tasten	Slave Konsole	Executor Fader	Executor Tasten
grandMA	1 - 20	21 - 60	*grandMA*	1 - 20	21 - 60
grandMA	1 - 20	21-25, 31-35, 41-45, 51-55	*grandMA* light + ultra-light	1 - 10	21 - 40
grandMA	1 - 20	21-25, 31-35, 41-45, 51-55	*grandMA* replay unit	1 - 5	21 - 25
grandMA light + ultra-light	1 - 10	11 - 30	*grandMA*	1 - 10	11 - 30
grandMA light + ultra-light	1 - 10	11 - 30	*grandMA* light + ultra-light	1 - 10	11 - 30
grandMA light + ultra-light	1 - 10	11 - 30	*grandMA* replay unit	1 - 5	11 - 15
grandMA replay unit	1 - 5	6 - 10	*grandMA*	1 - 5	6 - 10
grandMA replay unit	1 - 5	6 - 10	*grandMA* light + ultra-light	1 - 5	6 - 10
grandMA replay unit	1 - 5	6 - 10	*grandMA* replay unit	1 -5	6 - 10

16.3 Setting up a Network System

In order to set up a network configuration within the ***grandMA*** family, you can connect consoles of different types or with different numbers of DMX channels. The ***grandMA*** software is very flexible and can „correct“ possible differences in the current hardware.

16.3.1 Connecting consoles of different types

The master console always demands the slave(s) to behave like the master hardware. This means a “full” ***grandMA*** master forces a ***grandMA*** light slave to be a “full” ***grandMA*** temporarily. This results in phantom executor faders and buttons as the ***grandMA*** light (or ***grandMA*** replay unit) has a reduced hardware platform. Switching executor pages will then renumber the executors as given by the first executor on the master console.
When the connection is either manually or automatically (by a user-definable timeout) broken the slave console can be switched to Master mode with maintaining the setup and configuration of the “lost” master. For example, a ***grandMA*** master connected to a ***grandMA*** light slave will force the “light” to operate like a ***grandMA,*** even when the connection is lost and the ***grandMA*** light is forced to solo mode.
The table shows what master/slave connections are possible and how many and which executor faders and buttons are available on the slave during Tracking Backup and in solo mode afterwards.
Please note that the slave’s assignment of executor faders and buttons restores to the hardware default after the console is once re-booted.

16.3.2 Connecting consoles with different DMX channel count

In a Full Tracking Backup system the DMX channel count of the master console demands a temporary update or downgrade of the connected ***grandMA*** slave automatically. If a 4096 channel master is connected to a 2048 channel slave the ***grandMA*** slave will take over the 4096 channels and process them in all conditions even when the connection is broken regardless of what the original installed channel count.
Rebooting the slave will restore the installed channel count immediately. In a Full Tracking Backup situation where the master is defective this may cause a loss of show data as only DMX channels 1 to 2048 are processed on “smaller” 2048 channel systems. Therefore please make sure that the channel upgrade is being implemented on the slave.

16.3.3 Using a PC as master or slave console

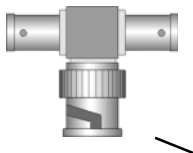
Though the ***grandMA*** Offline Editor software cannot be used to actively control DMX-channels as the DMX-Ethernet protocol is permanently disabled it still can be used in a master/slave connection with “real” ***grandMA*** consoles.
Because of the limitations of the PC hardware in combination with Windows® operation systems the ***grandMA*** Off-line Editor must be seen as “weakest” part of the EtherNet chain therefore it may only be operated as slave console.
You may use this setup with a PC as slave to easily transfer show file data to other ***grandMA*** consoles (whatever type they are), especially when they are used on a distributed network.

16.4 Connecting consoles for a Network Backup system

Any True Tracking Backup configuration with ***grandMA*** components may only be connected via a EtherNet communications network. The ***grandMA*** consoles currently support two different hardware types of transmission media.

16.4.1 10 Base-2 EtherNet (not for *grandMA* ultra-light)

EtherNet with 10 Base-2 connection media (also known as "Cheapnet") has lost its importance in todays networking technology. Nevertheless as 10 Base-2 systems are very easy to configure and they do not require additional networking nodes or hubs they might be used to easily link two or more ***grandMA*** consoles. As the built-in EtherNet card of the ***grandMA*** console autosenses the used connection media there is no need to configure the console's hardware at any time.
The connection cable used for 10 Base-2 EtherNet is a 75 ohm coaxial cable (RG-58U) with male BNC connectors on both ends. The maximum cable run is up to 180 metres from end-to-end.



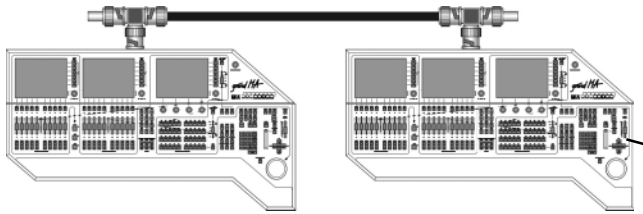
All connections to any kind of networking units (like consoles, PCs or Hubs) require the use of a "T"-connector, which has to be connected to the BNC output of the console. Extension cords are not permitted.

"T"-connector to be used with10 Base-2 network nodes

Any connection cable used for 10 Base-2 EtherNet has to be terminated on both ends with 75 ohm resistors. If these resistors are disconnected or of the wrong value no network operation will be possible.

Line termination on 10 Base-2 network

10 Base-2 EtherNet can be used for ***grandMA*** master/slave connections when no ArtNet DMX-Nodes or other distribution equipment is planned to be used. For longer cable runs or distributed networks 10 Base-2 EtherNet is not recommended any more.



Two ***grandMA*** consoles connected on a 10 Base-2 network

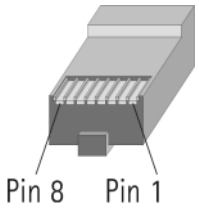
16.4.2 10 Base-T EtherNet

The most common EtherNet connection is the “twisted pair” link using 10 Base-T EtherNet. Hereby a peer-to-peer connection is established by minimum 4-wire cable connection at a maximum length of 100 metres. The cable is always equipped with 8-pole RJ-45 crimp-connectors.

“Twisted pair” cable to be used for 10 Base-T with RJ-45 connectors

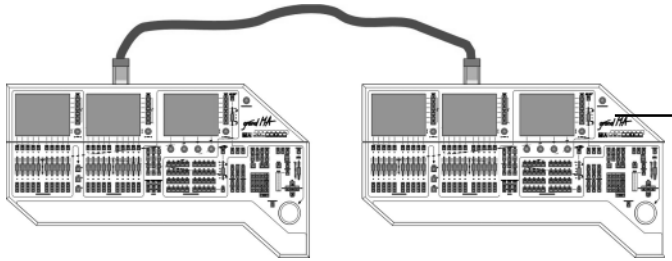
Pin No.	Colour of Wire (PDS/258A)	10BASE-T Signal
1	T2 white, orange stripes	Data transmit +
2	R2 orange	Data transmit -
3	T3 white, green stripes	Data receive +
4	R1 blue	*Not used*
5	T1 white, blue stripes	*Not used*
6	R3 green	Data receive -
7	T4 white, brown stripes	*Not used*
8	R4 brown	*Not used*

Pin numbers on RJ-45 connector and 10 Base-T standard signal assignment



As 10 Base-T EtherNet always requires an EtherNet hub to distribute the signal (connections from console to console go via a hub) a useful application will be any network where more than two consoles or consoles with additional equipment (such as ArtNet DMX-Nodes) are proposed.
For a simple peer-to-peer connection between two consoles a “crossed” 4-wire cable MUST be used.
“Crossed” cable to be used for 10 Base-T peer-to-peer connections

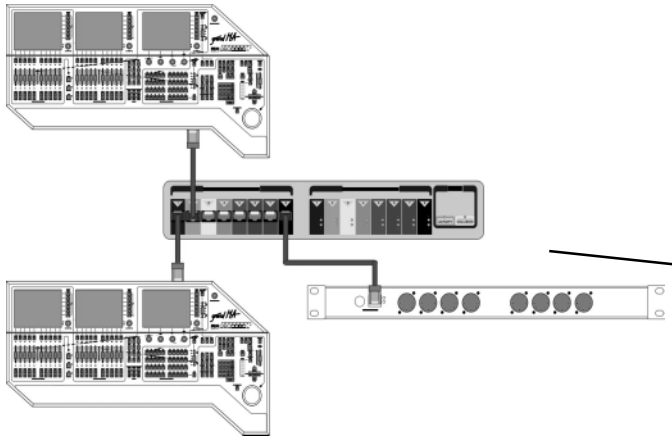
	Master Console End			Slave Console End	
Pin No.	Colour of Wire	10BASE-T Signal		Colour of Wire	10BASE-T Signal
1	T2 white, orange stripes	Data transmit +		white, green stripes	Data transmit +
2	R2 orange	Data transmit -		green	Data transmit -
3	T3 white, green stripes	Data receive +		white, orange stripes	Data receive +
4		*Not used*			*Not used*
5		*Not used*			*Not used*
6	R3 green	Data receive -		orange	Data receive -
7		*Not used*			*Not used*
8		*Not used*			*Not used*



Using a “crossed” 10 Base-T cable will allow a direct console-to-console connection but no additional components can be added to this connection type later on.

grandMA Master/slave configuration with 10 Base-T “crossed” cable

The console(s) can only work on one transceiver type at a time - when the 10 Base-2 port is in use anything connected to the 10 Base-T outlet is ignored and vice versa. If you want to connect more consoles at one time or the use of a ArtNet DMX-Node is required a 10/100 Base-T EtherNet-switch must be installed.
Also for security reasons on longer cable runs or branched wiring a 10/100 Base-T switch is strongly recommended (like a DMX-booster on larger DMX-networks).
The following example shows a network configuration with two identical consoles and an ArtNet DMX-Node for DMX changeover and distribution. All components are star-wired from a central EtherNet hub using standard 10 /100 Base-T cabling.



grandMA Master/slave configuration with 10/100 Base-T Switch and ArtNet DMX-Node

When deciding for a Switch, please make sure that its Cache is as big as possible.

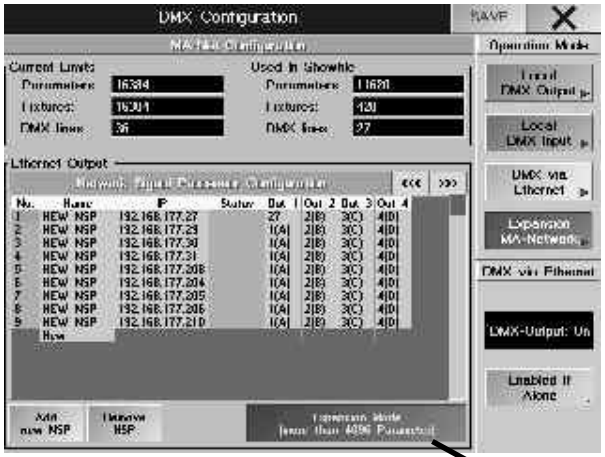
17 Channel extension with the NSP NETWORK SIGNAL PROCESSOR*

With a NSP, grandMA consoles (except MICRO) can be extended to 32.768 channels / 16.384 parameters. The console can be connected to up to 16 NSP, so that you can control 32.768 channels. This way, you save cable metres and can bridge greater distances easily. The NSP has to be connected to the console within a session, and has to be adapted in the DMX / NSP configuration menu.

NOTE: If more than 4096 ***channels are to be used, you absolutely need a network having a 100Mbit transmission rate. Make sure that there are no elements in the network potentially reducing your speed to 10Mbit.***
No problems will occur in a network environment with consoles having the following serial numbers:

- grandMA as of SN 490 onwards
- grandMA Light as of SN 317 onwards
- grandMA UltraLight as of SN 232 onwards
- grandMA Replay Unit as of SN 38 onwards
- grandMA MICRO with all devices

Consoles with lower serial numbers must be upgraded with 256 MB RAM and a 100MBit network adapter.



Start a session:

- press ***TOOLS***
- press MA NETWORK
- press ***START NEW SESSION*** and enter a name if asked to, plus a password fort he session
- press ***„X“*** to return to the ***TOOLS*** menu
- press ***DMX & NSP CONFIGURATION***
- press ***EXPANSION MA NETWORK*** to open the NSP configuration menu

Register a NSP on the console: (the NSPs should be switched on, connected to the network and have unique IP addresses – you can change their names and IP addresses in ***SETUP*** under ***UPDATE SOFTWARE***) and a session must be started!

- press ***ADD NSP***
  - if needed, enter a name
- select the IP address of the desired NSP and click on it using the Encoder

This will transfer the NSP into the overview

- assign the DMX lines to the NSP outputs (lines 1 – 8 equal A – H; lines 9 – 64 will only receive numbers)
- repeat the operation for each NSP

Delete a NSP on the console:

- click on a NSP in the overview
- press ***REMOVE NSP***

EXPANSION MODE: You can choose between 4,096 channels, whether the DMX channelss are output from the console (Expansion Mode inaktiv) or via network (Expansion Mode activated). For shows with more than 4,096 channels, the Expansion Mode will switch on automatically.

SOFTWARE UPDATE:
For updating purposes, the NSPs must not be set to ARTNET - set them to MAnet!

- Update the NSP like the other consoles in ***SETUP*** using ***UPDATE SOFTWARE*** and ***UPDATE CONSOLE***.

18 PDA-Remote Control

Introduction

The PocketPC is the ideal complement to our ***grandMA*** console. It combines the functionality of a console with the mobility of a compact organiser. It serves to remotely control the major operations and must be used together with the console. It is not intended to and cannot replace the programming at the console, as for reasons of visibility, only the most important menus will be displayed. Working with these menus is explained in the appropriate chapters of the ***grandMa*** User's Instructions; alternative operation and special key layout will be explained on the following pages.

The following devices are suitable

So far, the following products have proved successful: (as of 08/2004)

COMPAQ iPaq Serie 36/38xx with extensionPack PCMCIA
TOSHIBA e740/e750 version WiFi (recommended by MA Lighting)
TOSHIBA e800 (recommended by MA Lighting)
DELL Axim X5 with Linksys CF Wireless Adapter
HP iPaq Pocket PC H5400 family with ROM-update (from 17.03.2003)
Fujitsu-Siemens Pocket Loox 710 (recommended by MA Lighting)
HP iPaq H4155 / HP iPaq H 5550 BT

as access points: (as of 12/2003)

ASUS SpaceLink WL-300 (recommended by MA Lighting)
LINKSYS DI - 614+
3-COM WLAN Access point 2000
D-Link DWL-900APP+ Wireless Access Point
D-Link DWL- 800AP+
E-POX EWL-A11 Accesspoint
US ROBOTICS USR 5450
LANCOM L-54-g Wireless (recommended by MA Lighting)

If in the network there is a device having a transmission rate of more than 10Mbit, the whole network will be reduced to that transmission rate. As at the time being, all Access Points work with this rate, using a PDA can potentially affect the network.

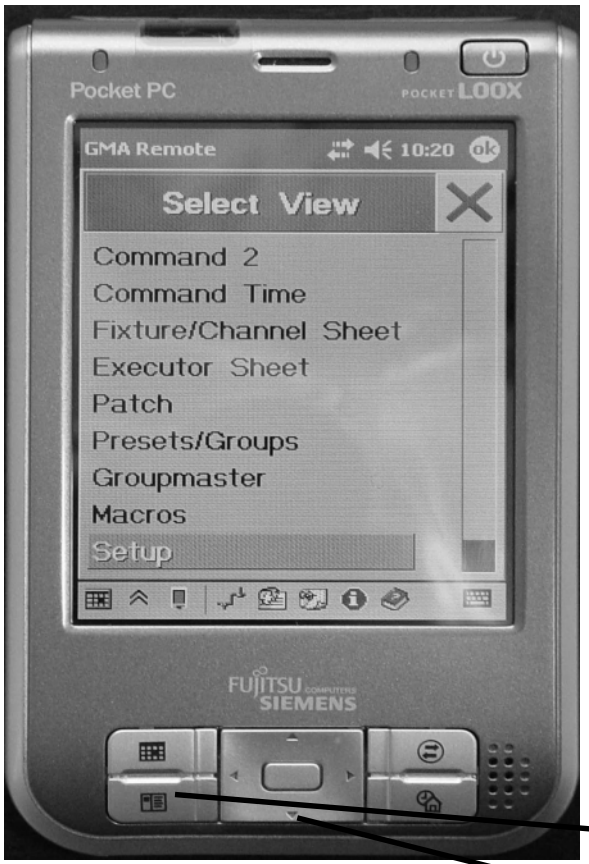
Installation

Install the Wireless Access Point according the the manufacturer's instructions.
On the PocketPC, select the installed adapter under SETTINGS / CONNECTIONS / NETWORK ADAPTER and enter the IP address plus subnet mask number 255.255.255.0 under PROPERTIES (***15.1*** Preparing the Network settings). Download the „REMOTE X.X" software from our website and connect the PocketPC via COM or USB interface with a PC. The program ACTIVE SYNC must be installed. Start the SETUP.EXE file - the software for remote controlling the ***grandMA*** console will be installed on the PocketPC. The software will recognize the operating systems Pocket pc, Windows Mobile pocketpc 2002, Windows Mobile pocketpc 2003 and Windows Mobile pocketpc 2003 SE (Second Edition), and will automatically install the respective modules.

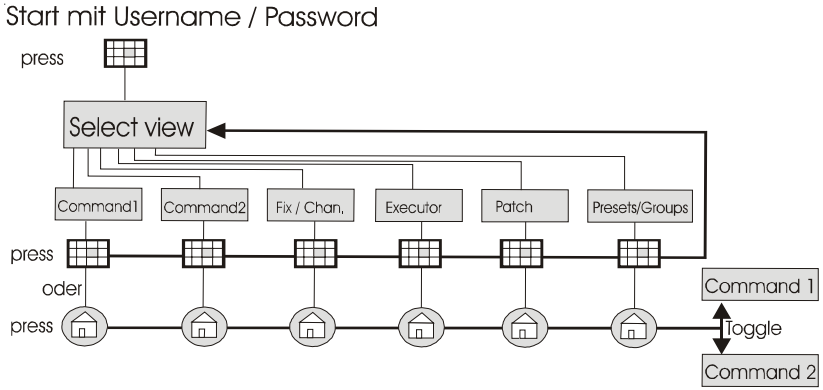
When all software and hardware requirements are met, the PocketPC is operational:

Switch on the console
Switch on the PocketPC
Call up the GMA-REMOTE program
Select the desired console
Log in with a user name and password (has to be registered in the console)it is not possible to log in as an administrator)On the grandMA-MICRO (without user management), the login will be skipped and the user be logged in with administrator rights.

You can connect up to 6 remote controls. ATTENTION: selected fixtures apply for all connected units and for the console.



The flow chart shows the Views available in the PocketPC. On the following pages, you'll find a description of atypical console operation



will ***always and at once*** switch to Command 1 / Command and switches between the menus

will ***always and at once*** switch to Select View

in the Fixture, Command 2, and Command Time menus, the key has the function of the NEXT key of the console

Depending on the menu, the cursor can have different functions, but will always have the purpose of moving (scrolling) or entering values (value - pressing on the outer edges) or confirm or switching over (pressing in the middle)

The key layout is identical for all PocketPCs, even if the symbols on the keys differ, have other symbols or the keys are arranged differently.

Besides the label, the buttons have, depending on their operational task, different symbols, to make orientation easier:

▼ (black) = pressing shortly or long will bring up a menu
→ (black) = reference to the next menu, you could open

The following terms are used to explain the keys to refer to different effects:

short: = short press on the key, to get to the function
long: = long press (time can be set in the PocketPC) the function will be started after this time (acoustic signal)
toggle: = each time you press the key, the next function is selected
press center: = press on the cursor in the middle

To set values by the Cursor, you can define three setting speeds: coarse - fine - finest

The setting can be performed either

- using this key, and with each press you will switch from one setting speed to the next one,

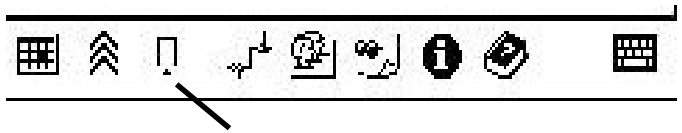
or

- pressing the Cursor Scroll key ***long*** and selecting the setting speed in the menu

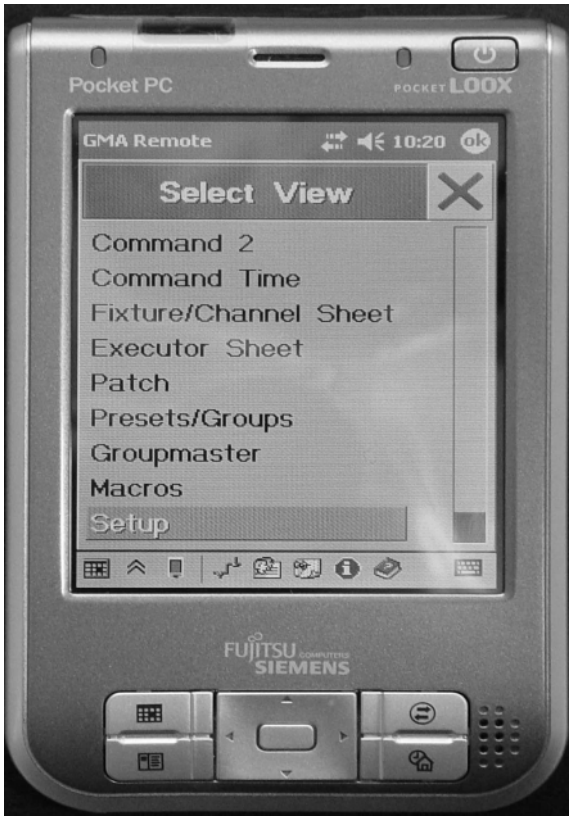
or

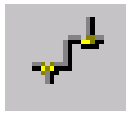
- using ***toggle*** in the taskbar, and with each press the setting speed will be switch to the next one.

^ = finest ^ ^ = fine ^ ^ ^ = coarse



Using more than one remotes can cause bad screen display (parts of the menue are missing). Press REFRESH SCREEN to actuate the screen..





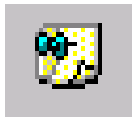
Available Desks:
toggle: see the available desks or the standard menu
(red cross: desk is available, green hook: desk is connected)

Chat- Menu:
menu to send messages to desks/user in the net

close the menu with ok

HELP- Menu:
Information for button- and cursor functions

close the menu with ok



Buttons:
Here you can adjust the hold-down time for some hard- and softkeys

Here you can swith on/off the horizontal cursor buttons during the value setting. The cursor left/right can adjust the next parameter e.g. if in COLRMIX the parameter CM1 is set the vertical Cursor adjusts CM1, the horizontal Cursor may adjust (this setting) CM2.

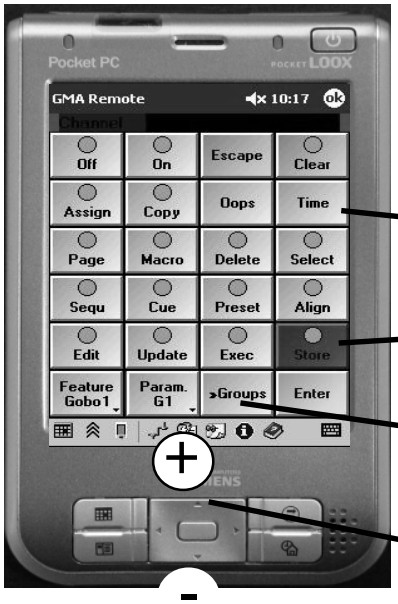
Chat:
set the acoustic signal on/off

Current IPs:
shows the actual IP-address of this pocketPC
close the menu with ok

COMMAND 1
call with SELECT VIEW or pressing the key. The keys shown are equal to those on the console, any entry will also be displayed on the console.

When entering data on the Command Line, you have to toggle between the 2 Views to get to the respective buttons.
e.g.

DELETE CUE (Command 2) 50 ENTER (Command 1)



COMMAND 2
call with SELECT VIEW or pressing the key. The keys shown are equal to those on the console, any entry will also be displayed on the console

e.g. Select Fixture (in COMMAND) and „blind“ (i.e. without displaying the values), modiy the parameters

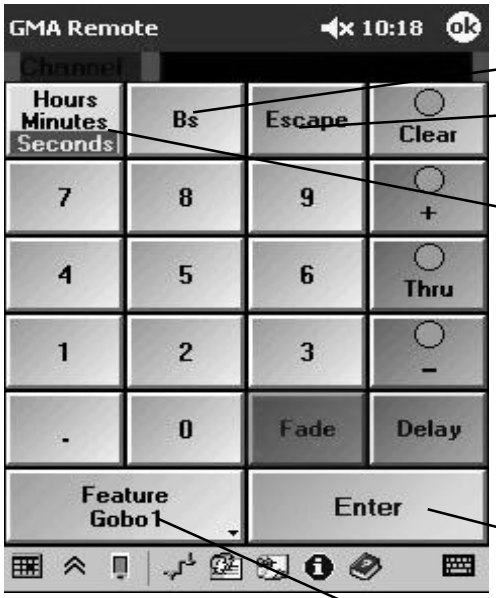
long: STORE OPTIONS

short: Select the parameter
long: Calculator

Modify the current parameter

Command Time

To set the Fade / Delay times; after having selected Fixture and Feature, enter in the following sequence:
- Fade / Delay
- numeric value
- time dimension (must have a red background)
- ENTER



Backspace to delete the last entry in the CommandLine

Escape to delete the CommandLine

blue background + ***short:***
toggle:
hours/minutes/seconds
long:
marked dimension will get a red background and remains set as it is

After confirming with ENTER, the COMMAND 2 menu will be called up automatically

short: choose the Feature
long: Pull down menu of the Features

toggle: Fixture / Channel / Fader

toggle: Sort Dir / Sort By / Readout

Switching to Values and Presets / fades / Delays / Values Only / DMX / Executor ID / Cue ID

toggle: Presets - Sheet

In the Channel/Fader sheet, activate the Cursor scroll
in the Fixture sheet
toggle: Cursor scroll / Cursor value

short: Select the parameter (if more than one)
long: Calculator - when name marked in the Fixture

short: Choose the Feature

short: same function as of NEXT key on the console
long: Pull down menu

for Cursor Scroll:
- scrolling in the Sheet when name is marked (frame around the name blinks)
- ***press:*** OPTIONS will be displayed

for Cursor Values (name must be marked and frame around the Feature blinks)
- changes the values of the chosen parameter
- only with activated „Change Parameter“ in the Button menu
  - with feature PAN/TILT change values in PAN and TILT
  - with other features change values of the right neighboured parameter
- ***press:*** to the next parameter (e.g. Color1, Color 2...)

MA Lighting Technology GmbH · Dachdeckerstr. 16 · D-97297 Waldbüttelbrunn · www.malighting.de eMail: info@malighting.de

Fader Sheet

displays the current Sheet
toggle: Fixture Sheet / Fader Sheet / Channel Sheet

Values Only

short: Selection

Cursor Values

short: toggle between scroll / value
long: cursor mode

Columns

short: The figure indicates, how many channels will be displayed in one column. Enter a new number (x - x) and confirm with OK

for Cursor Scroll
- ↕ scrolling in the Sheet for Cursor Values
- ↕ to change the values of the marked Dimmers

for marked name (frame around the name blinks)
- ***press:*** OPTIONS of the Dimmers will be displayed

Channel Sheet

displays the current Sheet
toggle: Fixture Sheet / Fader Sheet / Channel Sheet

Values Only

short: Selection

Cursor Values

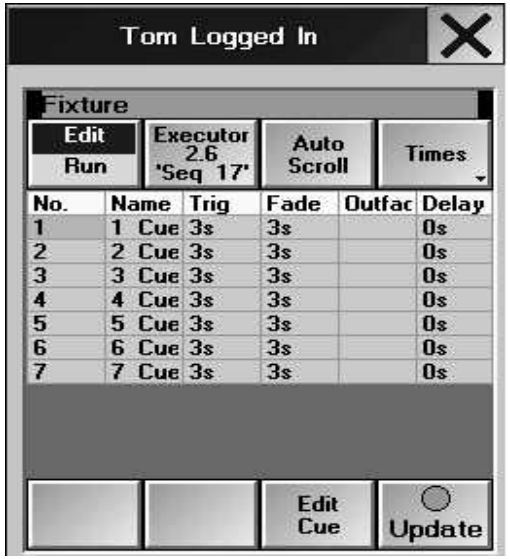
short: toggle between scroll / value
long: cursor mode

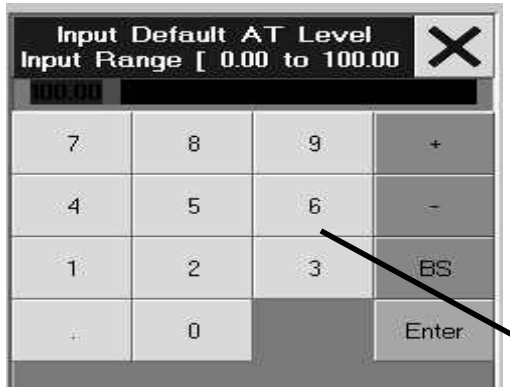
Columns

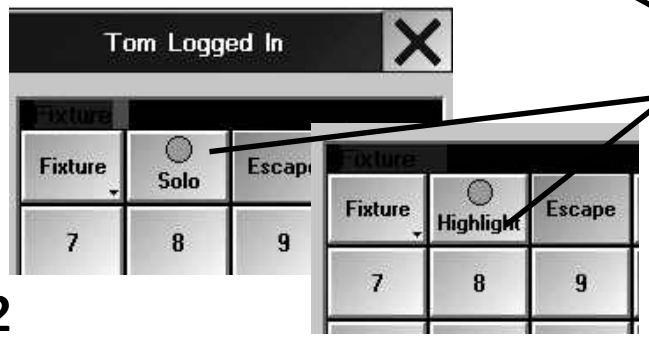
short: shows name of Channel orFader

for Cursor Scroll ● scrolling in the Sheet
for Cursor Values
- ↕ to change the values of the marked Dimmers

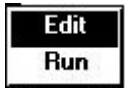
for marked name (frame around the name blinks)
- ***press:*** OPTIONS will be displayed



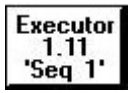




Executer / Edit

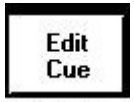


toggle:
Run / Edit



long:
to select the Executor

toggle:
Times / Loops



Changing values:

- press ***Edit Cue***
- mark the relevant value with cursor
- Center Press on Cursor
- value input with the Calculator, confirm with ***ENTER***
- press ***Update***

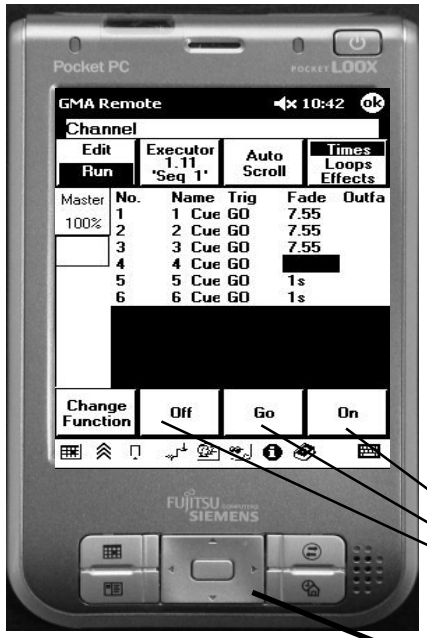
SETUP

DUAL DIGIT VALUE ENTRY: Entries performed over the numeric block, have to be done in the conventional way; entry 2_0 will yield a value of 20.

SINGLE DIGIT VALUE ENTRY: Entries performed over the numeric block will be done in factors of ten; entry 2 will yield 20, 0_5 will become 5, and 1_5 will yield 15 (without switching to DUAL).

Default AT: Here, enter the percentage value that the selected fixtures or dimmers are to take when the 2x AT command is used

HIGHLIGHT NORMAL / IS SOLO: The function of the button in COMMAND 1 will be set to the respective function
IS SOLO: has the SOLO function, i.e. all fixtures not selected will be set to the dimmer value 0 (except they were set to NO MASTER in SETUP)
NORMAL: The HIGHLIGHT button has the normal Highlight function.



Executer / Run

short:
Changes the function of the three right buttons: if CHANGE FUNCTION lights green press one of the buttons and select a new function. After the second press on CHANGE FUNCTION the chosen functions will be executed
Buttons with functions differing from the default setting, have a blue background. The modified setting can be saved with AS A DEFAULT FOR ALL as new default setting.

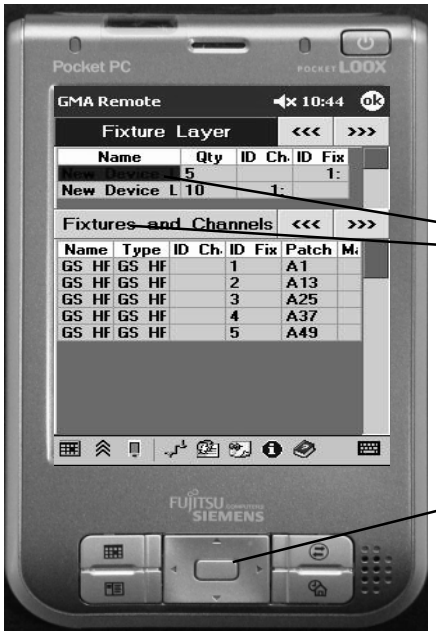
short:the chosen functions will be executed

set master with fader or cursor

Makros

Macros can only be started or stopped. Creating or modifying macros has to be performed on the console.

Use the cursor to scroll in the Sheet, if only some of multiple macros are displayed.



Patch

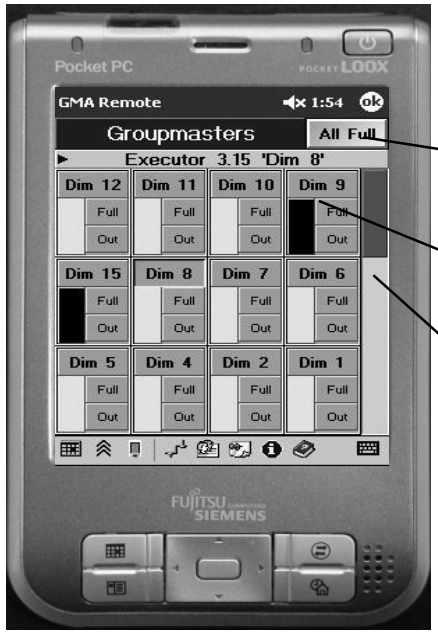
Note: on the console, FULL ACCESS may NOT be opened in the SETUP!
Only LIVE ACCES is available with the PDA

switch with Touch, active part has a heading with a dark blue background

- scrolling in the Sheet

for the marked cell

- press center, to change the contents of the cell or make entries (depending on the cell's contents) - same function as the Encoder of the console

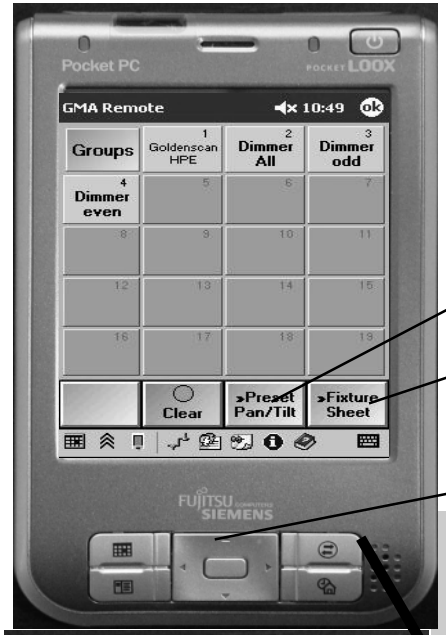


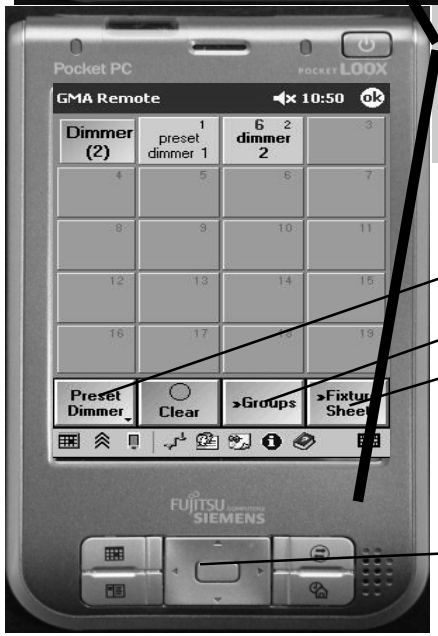
Groupmaster

short:
All Full sets all groupmaster to full

Full master is set to full
Out master is set to zero
scroll the master to the desired value

scroll
display can show max 12 masters; if more masters are created, scroll to the next page with also 12 masters





short:
same function as NEXT key on the console
long:
pull down menu for Prev., ALL, ODD, EVEN

Groups

toggle:
Groups / Presets

toggle:
Fixture / Groups

- ↕ jump to the next Group button
- ↔ jump to the next Group area
- ***press:*** OPTIONS will be displayed

Presets

Pull Dowm menu of the Features

toggle: Groups / Presets

toggle: Fixture / Presets Pool

- ↔ jump to the next Preset button
- ↕ jump to the next Preset area
- ***press:*** OPTIONS will be displayed

Declaration of Conformity
according to directives 89/336 EWG and 92/31 EWG

Manufacturer's name:	MA Lighting Technology GmbH
Manufacturer's address:	Dachdeckerstraße 16 D-97297 Waldbüttelbrunn Germany

declares that the product

Name of product:	MA ***grandMA, grandMA*** light, ***grandMA*** ultra-light, ***grandMA*** RPU, ***grandMA*** Micro
Type:	MA GM

complies with the following product specifications:

Safety:	EN60065, EN60950
EMV (EMC):	EN55103-1 (E1), EN50081-1 EN55103-2 (E2), EN50082-1
Additional information:	DMX512 and analogue inputs and outputs must be shielded and the shielding must be connected to the earthing resp. to the housing of the corresponding plug.

Dipl. Ing. Michael Adenau

FAQ / TROUBLE SHOOTING

Question	*Answer*
Why will my console, on which I have created a session, suddenly become SLAVE, after inviting another console?	The other console's priority is higher than that of the „founder" console. see chapter 14.1
Why will the 3D not function?	When working with the 3D Visualizer, you have to activate TOOLS / MA NETWORK MULTIUSER on the console. IP addresses do not correspond. The first three groups of the IP have to be identical, e.g. 192.168.177.xxx, the figures of the forth group (here xxx) have to differ for each device connected. The 3D version is not compatible to the console software; the first three figures of the version number have to correspond:4.36X Some anti virus programs like e.g. NORTON ANTIVIRUS, can disturb the interplay with the 3D - deactive these programs.
Will only boot up to the message: COULD NOT FIND ATA (blue scree)	Hard disk failure or not present or cable disconnected. Repairs should be performed by a service technician, see hotline contact on the bottom margin.
Will boot up to the message: (screen will remain black, will not become blue) „no system found"	Flash corrupt, not present or bad contact. Repairs should be performed by a service technician, see hotline contact on the bottom margin.
Features are not assigned correctly; e.g. the wheel changes the PAN setting, or the fixture cannot be triggered.	The patch number used for patching has to correspond to the fixture address – if e.g. for a moving head, the figures do not correspond or

	are placed on moved positions, no or the wrong channels will be triggered. Choose SETUP / FULL ACCESS / in FIXTURE LAYER the group to which this fixture belongs; in the menu below, you can find the starting number of this fixture – it has to correspond to the address adjustable on the fixture. e.g. on the console B17 = on the fixture 017 If the fixture has 14 channels, the next fixture must beginn with B31.
Moving Heads or Scanners are hanging in 90° or 180° angles on the traverse - what do I have to consider when using the PAN / TILT function?	Adapt the fixtures using the parameters X*, Y* and Z* in SETUP / FULL ACCESS - if needed, use INVERT to adjust the sense of rotation of PAN and TILT.
When loading a new show (from the hard disk), the console will freeze showing the message REBOOTING - PLEASE WAIT. After resetting (using the yellow button on the rear side of the console), the show will load.	It is highly probable that a software error has occurred on the hard disk. Repairs should be performed by a service technician, see hotline contact on the bottom margin.
When starting a sequence (using the Executor button or the Executor fader), the fixtures will not light up on the stage, but the Channel Sheet shows some values (nothing in the STAGE window).	Master open ?/ Group master open? If in the Channel / Fader and Fixture Sheet the ID numbers or the names have a blue background, the master has a subordinate priority.
When loading a show from floppy that had been created on another console, no fixtures will appear.	World assigned correctly?

Question	*Answer*
The configuration of my console (Tracker ball, Screen Off, etc.) has suddenly changed , settings and IP numbers have changed.	If the DELETE SHOW button was pressed while loading a show, alle configuration settings were reset to their defaults. All settings must then be entered anew. Sorry.
In the NETWARE CONNECTIONS menu, I cannot see some consoles, although they are in the network.	The consoles have different version numbers and will, therefore, not be recognized by the network. Update the consoles to the current software version.
Can I select active fixture (e.g. an active Cue) automatically to form a group?	All fixtures of a Cue can be selected using the EDIT function< in this setting, you can save a group using STORE, that is a SELECT ALL ACTIVES function, so to speak.
Can I exchange fixtures that are part of a seqency? e.g. dimmers of another manufacturer, or fixtures having more features?	If you delete or exchange fixtures in the SETUP, all values of the matching sequence that are not necessary, will also be deleted (cannot be restored). I.e. if a new fixture does not have e.g. a color wheel, the color wheel values for this ID will be deleted - and cannot be triggered, even if you install the old fixture again afterwards. If the new fixture has more features than the old one, these will not be accounted for. It is recommended to copy the show to another name and test exchanging the fixture there.
Group master moves on each page, even if the fader is „empty“; or a group master moves, although it was not switched on.	Under LOOPS / LINKS (possibly in a macro, too) only the fader number without page number has been entered for the sequence - e.g. fader 14 instead of 1.14; that is why fader 14 will be moved, disregarding the program for this fader.

Question	*Answer*
Can I switch the console on and off using an powerline-integrated timer, to start a show automatically?	A timer does the same as an interruption of the power supply, i.e. the grandMA, Light and the ReplayUnit will immediately switch over to battery supply and will shut down the console after 3 minutes. No problems here, as all active applications will restart after a reboot. After switching on, the UltraLight will possibly try to access the BIOS and not boot correctly. In general, it is advisable to let the console switched on and have the show run via the AGENDA menu.
Can I re-patch a fixture during a show (e.g. because a malfunction has occurred)?	In the Command line, you can patch fixtures or change the patch number, without disturbing the show. Same applies to the DMX sheet, when using the mouse.
Being in a specific sequence, can I start the cue of another sequence?	In the sequence, start the cue in the LINK column with> ***GOTO x*** (cue no.) ***EXECUTOR x.xx*** (Executor no.)
Can I run any show on any console?	All shows will run on all grandMA consoles; only exception with the Micro: the show may only have 1,024 channels; when loading a bigger show, the channels in excess have to be deleted, as the performance would not be able to handle it, and only 2 DMX universes could be output.

SERVICE - TIMETABLE

In order to guarantee the legendary reliability of our products over a long period of time, you should mind the service lives of some hardware components. These parts are heavily stressed in continuous duty and are subject to normal wear and tear. By replacing these parts in time, you can avoid malfunctions in time-critical situations. The replacement intervalls depend on the stress and environmental conditions< the specifications listed below, are based on our experience data.

Part	***Recommended replacement after:***	***Delivery situation (in Europe)***	***Installation (follow safety instructions)***
Batterz not UL and MICRO	4 years	2-3 workdays	Simple installation by experienced amateur
Hard disk not MICRO	3-5 years	2-3 workdays (should be in stock when using several devices)	By electronic specialist having appropriate tools or MA service
Touchscreen	after mechanical damage	2-3 workdays	By electronic specialist having appropriate tools or MA service
Encoder	2-3 years	2-3 workdays	By electronic specialist having appropriate tools or MA service
Motor fader only grandMA and Light	depending on env. situation immediately if liquid has entered On malfunction, clean slot with a Q-tip	2-3 workdays	By electronic specialist having appropriate tools or MA service

Spare parts can be ordered from:

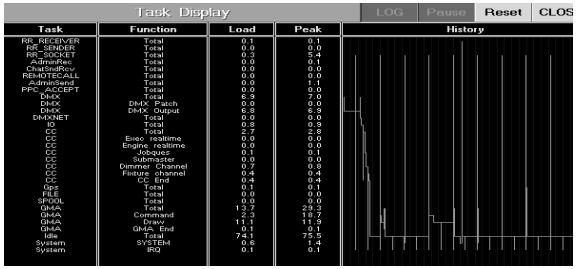
MA Lighting GmbH
Dachdeckerstraße 16
D 97097 Waldbüttelbrunn
info@malighting.de

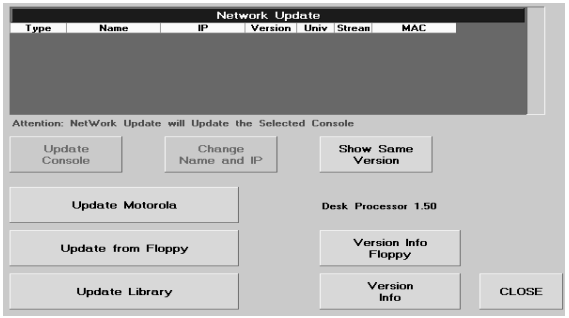
or

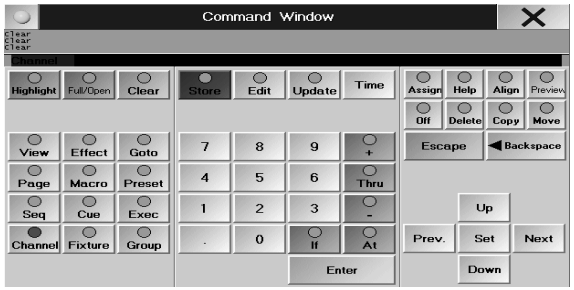
Lightpower GmbH
An der Talle 26
D-33102 Paderborn
info@lightpower.de

or your local distributor

For your order, please have the serial number of the device at hand.







Special functions

Some function keys of the external keyboard are reserved for special functions. You will only need these functions, when components malfunction< you would not use them during normal operation.

F1 SCREENSHOT (without figure)
To transfer screeshots to a PC using FTP

F2 TASKDISPLAY
Here, important operational data are displayed for service engineers.

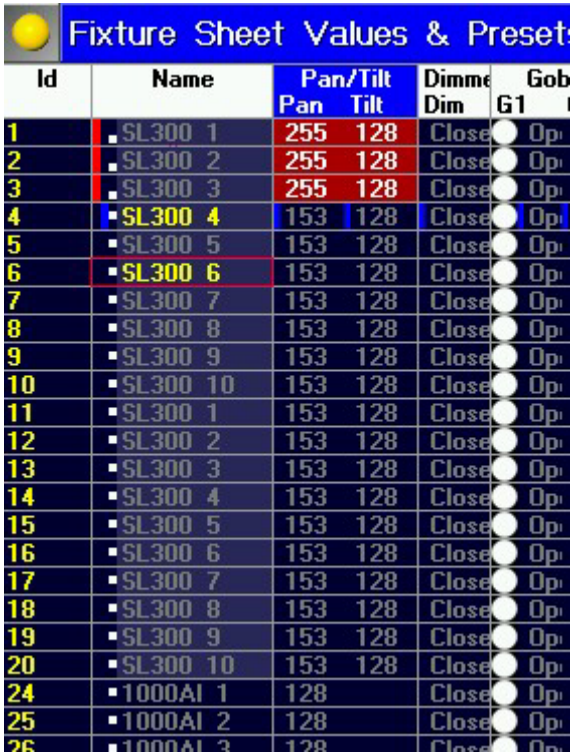
F3 RIGHT TOUCH SCREEN TO RIGHT EXTERNAL SCREEN (not on the MICRO)
To transfer the contents of the right screen to an external monitor. Some menus, e.g. SETUP, will only be displayed on the right screen< if this screen fails, you can use F3 to switch to an external monitor. You can then operate the menus using the mouse.

F4 UPDATE
To update the software, if the SETUP menu cannot be accessed, e.g. after a cancelled update)

F7 COMMAND WINDOW
Here you find the most important buttons as softkeys. Will especially be useful, e.g. when operating the ReplayUnit.

F9 SWITCH OFF ALL TOUCHSCREENS
To switch off all touch screens, if e.g. a screen is blocked by a failure so that you can make no entries.After switching off, you can only proceed using the mouse.

COLOR CODE



Colors in the FIXTURE, CHANNEL and FADER window

Entry or function	*Status*	*Channel number/ attribute*	*Dimmer channel value*	*Scanner attribute values*
Channel or attribute not used or released by 3x CLEAR	not selected, no value	grey	grey	grey
not selected, but value of any Executor	not selected, but starting value >0%	grey	yellow	yellow
Dimmer not selected, master starting value sequence has not changed the	not selected, but value	grey	blue-green	yellow last fade on
Dimmer not selected, last fade on master sequence has reduced the value (DOWN)	not selected, but starting value 0	grey	green	yellow
Dimmer not selected, last fade on master sequence has increased the value (UP)	not selected, but starting value 0	grey	magenta	yellow
Not selected, was manual	not selected, but changed manually	grey	white on dark red background	white on dark last change red background
Manual selection	selected, but not active	yellow	grey	grey
New manual activation or Fader/Encoder movement	active	yellow	white on red background	white on red background
Selection by CLEAR deleted	not selected, but changed manually	grey	white on dark- red background	white on dark red background
Activation by CLEAR deleted changed manually	not selected, but	grey	white	white
Not selected, but value of any Executor (except master)	only starting value	grey	yellow	yellow
Not selected, but preset activated	not selected, value of preset	grey	turquoise on dark red background	white on dark red background
Selected, after preset already active	selected, value of preset	yellow	turquoise on red background	white on red background

COLOR CODE

Activation by CLEAR deleted	not selected, value of preset	grey	white on turquoise background	white

white square (only fix)	PAN position of a moving head fixture. 3 settings possible
violet bar (fix)	these attributes are currently used by an effect
ID number green (only fix)	ID number(s) are selected and can be moved in the Fixture Sheet - only the sorting order of the sheet will be changed, has no other eff ects
blue bar	the channels are „parked“. On the DMX output, no changes will be output (the last value will be kept); internally, however, they can be changed and saved.
blue background	the fixture has been switched to No Master in the „Dimmer Option“ or „Fixture Options“ menu; these fixtures will not react on the reagieren nicht auf den GrandMaster, i.e. for GrandMaster on 0, they will react on changes made using the wheel or the Group master, to which these fixtures belong.
violet background	MODULATOR settings have been changed.
grey background	the values has been changed by another user within one session (this value will not be taken into account when saving, and can only be modified after having selected the fixtures)

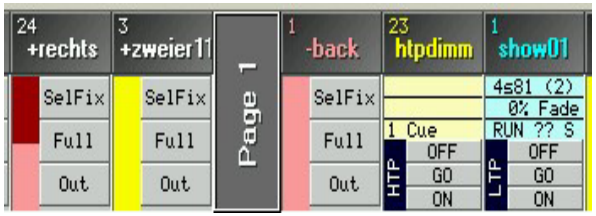
Colors used for the screen display in the Executer Fader

Color or symbol	
white triangle (title bar)	shows the priority when overwriting in LTP mode no triangle = medium priority
light green (title bar) only 1 master sequenz possible	this sequence is the master sequence (SELECT + Executor No.) All store commands will always affect this sequence, on the grandMA, only the yellow keys that are available in a sequence will have an effect on this sequence
dark green (title bar) possible for multiple Executors	these sequences are Default sequences. The yellow buttons or the command combination (e.g. GO+, GO-, Pause, etc.) and ENTER will affect all light and dark green Executors at the same time. The setting is temporary and will not be adopted when saving
orange (cues) for several sequences	this sequence is fixed and, even after switching the pages, will be visible (sequences or chasers that are on this position, but on a different page, will only be covered, but otherwise not affected, even if they are currently running.

The master sequence can also be fixed (green + orange).

When scrolling through the pages, fixed sequences can cover other sequences on the same position - this will not affect the operation as such. After resetting the fixed sequence, sequences that had „disappeared“ can be reloaded from the pool.

COLOR CODE



Colors used for displaying the DMX output sheet

Color or symbol	
Dimmer values yellow	value of an Executor (changes while sequence is running)
Dimmer value light grey	default value of the fixtures
Dimmer value cyan	entered value or value that has been changed in this cue
Dimmer value magenta	tracked value
Dimmer value green	value has been reduced
Dimmer value blue	
Dimmer value white with red background	manual activation or fader/Encoder movement
Dimmer value white with background	not selected, but changed manually selection deleted with dark red CLEAR
Dimmer value white (bold)	not selected, but changed manually activation deleted with CLEAR
Background blue-green	
Background black	empty = DMX channel is not patched dash = DMX channel is patched, no values will be output by the current cue

Colors used for the screen display in the Group Sheet

Color or symbol	
grey area	group with several fixtures
grey area with blue frame	group with several fixtures are selected
blue area	group consists of one fixture

Colors used for the screen display in the Group Master

Color or symbol	
Text white (starting with a + sign)	name of the group master
Text pink (starting with a - sign)	For this group master, the NEGATIV INHIBIT option has been selected
Pink bar + blinking LED	The motoriyed fader has been blocked when adjusting it and has not reached the given value if the pink bar is on zero, only the dark red background can be seen.
Yellow bar	shows the position of the group master if the yellow bar is on yero, only the black background can be seen

COLOR CODE

Colors used for the screen display in the Worlds Sheet

Color or symbol	
red triangle in the upper left corner of the World button	This world does not contain all attributes of the fixtures
Warning sign on the World button	This World is being used by another user

Colors used for the screen display in PRESET POOL

Red triangle	The preset can olny be used for those fixtures, it was created and saved for
Text very faint	The preset was deleted in SETUP and cannot be applied any more
Blue frame	Preset is selected
Green area	These presets can be applied to the selected fixtures - the higher figure shows the number of fixtures, on which the preset is applied to (the small figure is the button number)
Yellow area	These presets can be applied to the selected fixtures - the higher figure shows the number of fixtures, on which the preset is applied to (the small figure is the button number)

Colors used for the COMMAND LINE

Black	Command was executed
Red	Command was not executed. An entry was missing or a command was not possible, because e.g. a triggered button was empty
Green	Macro was executed
Blue	Time code was executed

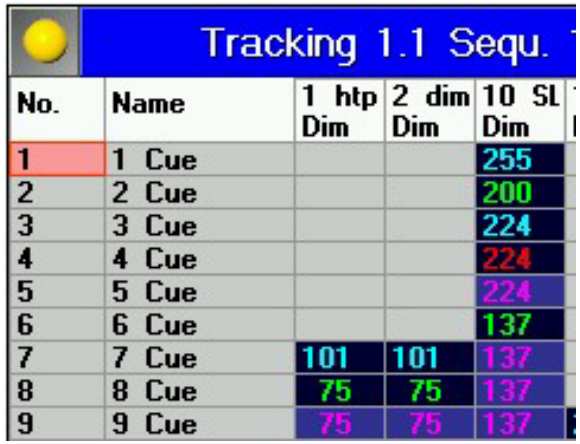
Colors used for the VIEW BUTTONS

Yellow	here, the screen dumps of several monitors are saved, i.e with this button, you can also switch other monitors.
Orange	the saved screen dump only refers to this monitor
Brown with green text	this View is currently shown on the monitor

Colors used for the SEQUENCE POOL

Yellow key symbol	sequence is locked and cannot be edited
blue frame	sequenz is selected

COLOR CODE



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Colors used for the screen display in the Tracking Sheet

Color or symbol	
Dash	No value entered (the default value will be output)
Dimmer value cyan	Entered value or value that has been changed in this cue
Dimmer value magenta	Tracked value (is defined by the previous cyan-colored value and is not saved, i.e. if you change the cyan-colored value in a cue above, all magenta-colored values following will also change)
Note: The tracked values will only be executed within the sequence, if the Tracking option had been selected in the Assign menu< otherwise, the values will not be executed, although they appear in the Sheet. If only some of the fixtures are to be tracked, you have to block those values not to be tracked and have to set them to 0.	
Dimmer value green	value has been reduced
Dimmer value red	Blocked value (the value that was defined by the previous cyan-colored value, will be saved. Changes on the previous cyan-colored value will no longer affect the value - the first (upper) tracked value will turn from red to cyan.
Background red with blinking frame	this value is selected
Fixture name yellow (header bar)	this fixture is selected in the Fixture Sheet
Sequence name in title bar white	Figures in the cells are dimmer values. Display can be adjusted over an option
Sequence name in title bar green	Figures are Fader times (press TIME 1x)
Sequence name in title bar orange	Figures are Fader times (press TIME 2x)

Colors used for the screen display in EFFECT POOL

Color or symbol	
Pink button	Effect group with assigned scanners / dimmers
Red button	Effect group without assigned scanners / dimmers
Green button	
Blue button (in the ALL RUNNING EFFEKTS menu)	Temporary Effect group, will be deleted after switch-off, if not saved before
Circulating white dot	the effect is running

Colors of the Screen Display in the SEQUENCE POOL

yellow key symbol	the sequence is saved and cannot be edited.
blue frame	the sequence has been selected.

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